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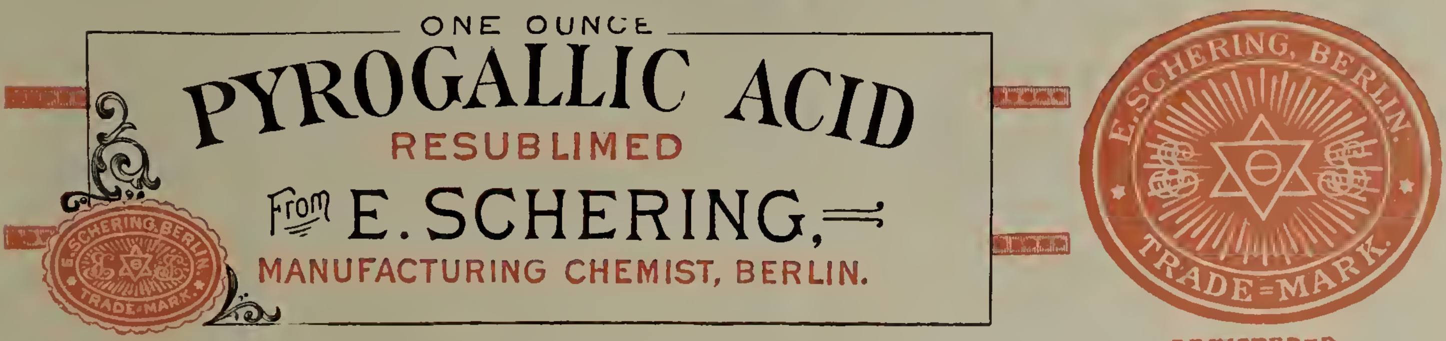

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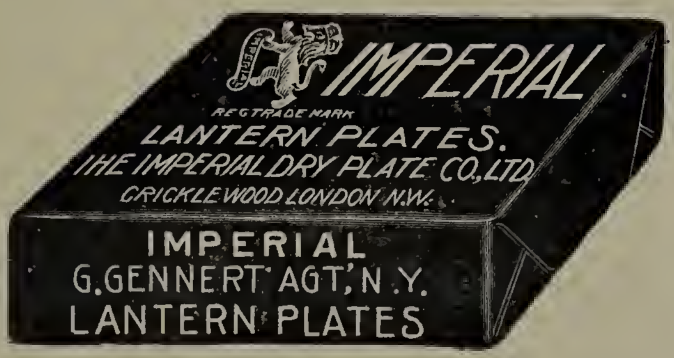

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BY THE CANAL LOCK *By F. A. Tinker*

(Kodak Exhibition)

THE
PHOTOGRAPHIC TIMES

VOL. XXXVIII. DECEMBER, 1906 No. 12

THE KODAK EXHIBITION.

BY THE EDITOR.

CHILD WITH BALL
By Ethel Terry
(Kodak Exhibition)

THAT amateur photography is not a fad, but ranks as an educational necessity and a permanent institution in the home was most decidedly demonstrated by the interested and enthusiastic crowds that thronged the Concert Hall in Madison Square Garden during the two weeks stay of the Kodak Exhibition in New York. Earnest groups of amateur photographers throughout the world have been striving to prove that there *is* art in photography and have succeeded nobly in defending and proving their contention, but it has remained for the Eastman Kodak Company to fully demonstrate the art possibilities of photography to the public in general. The remarkably beautiful collection of enlargements shown, over three hundred in number, are each and every one from amateur negatives, some made with the simple and inexpensive little Brownie camera, in childish hands, and some by hunters and explorers in far off lands, and even a collection made by England's Queen.

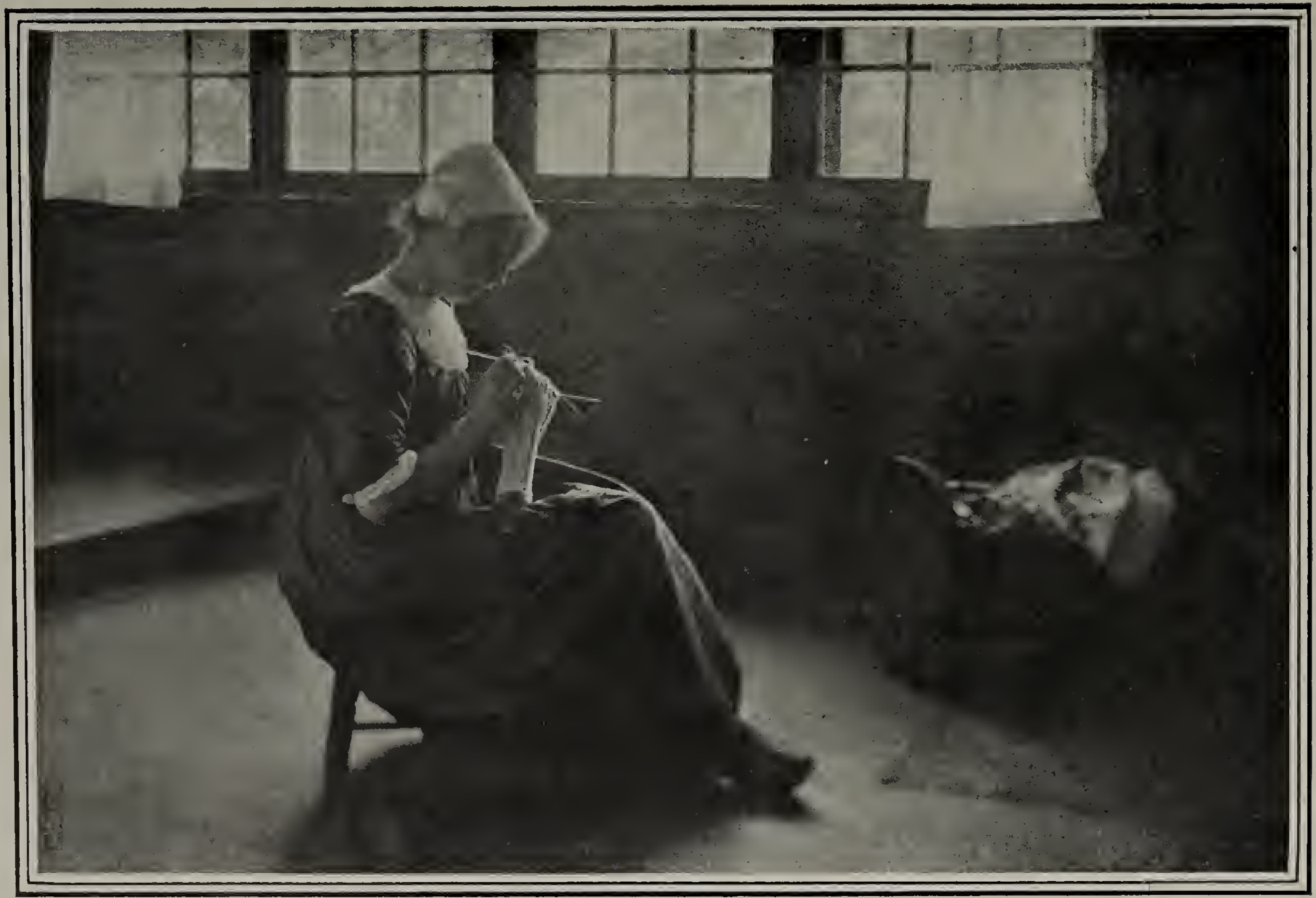
GATEWAY AT OLD OREAD
By Miss S. Virginia Atwell
(Kodak Exhibition)

THE PASSING SHOW *By Benj. W. Guppy*
(Kodak Exhibition)

There are pictures from every part of the world and of infinite variety, and aside from a few of purely scientific or technical interest, all are alike rich in artistic beauty. The collection includes pictures by such well-known amateurs as A. Horsley Hinton, Alfred Stieglitz, Edward J. Steichen, Rudolf Eickemeyer, Jr., and many others. The handy and convenient little pocket camera has each year still further demonstrated its usefulness and adaptability for serious work, until now the amateur afield with a large camera is the exception rather than the rule.

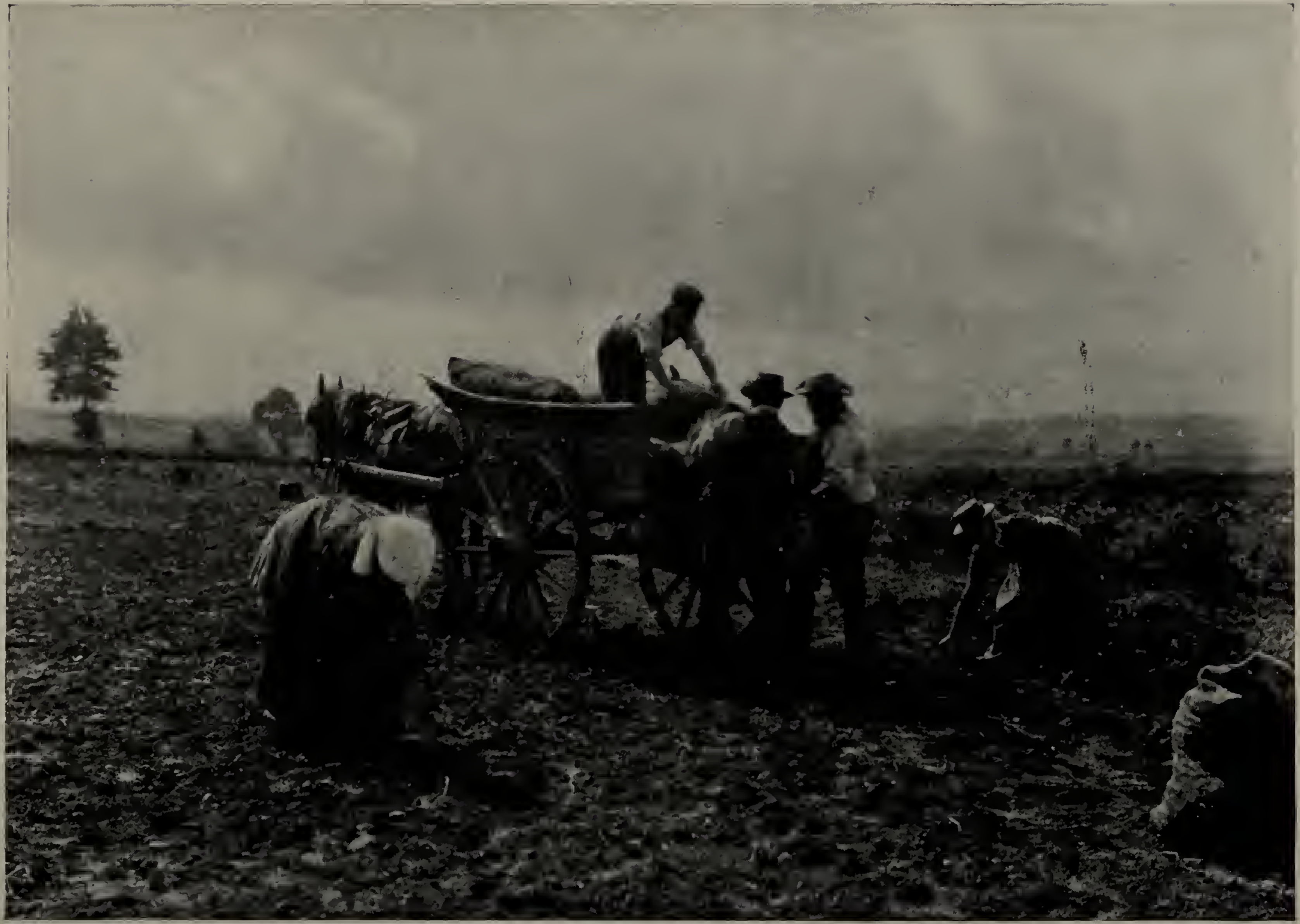
Aside from its recreation features, the camera has proven an enormous factor in the education of the people, instilling in the mind a love for the beautiful and training the eye to observe and the memory to retain much of the beauty of nature that would otherwise pass unnoticed. Possibly there is no other recreation so many sided as amateur photography; the homeside, how every one of us cherish the little pictures of home and those that go to make it up. In all the sports, photography finds a place, and oft times even in sordid business, the amateur finds an opportunity to make use of his beloved camera. Always something to interest, amuse and instruct in Kodakery, and it is as Dr. Dixon, the eloquent lecturer of the exhibition so aptly terms it, the "Queen of Hobbies." While the Kodak Exhibition is prompted by commercial interests and is for the purpose of advertising the products of the Eastman Kodak Company, yet so skillfully is this concealed that each visitor comes away feeling indebted to the company.

GOLDEN LOCKS *By Dr. Albert R. Benedict*
(Kodak Exhibition)



SHADOWS *By Myra Albert Wiggins*

(Kodak Exhibition)



THE TURNIP GATHERERS *By Miss Stocks*

(Kodak Exhibition)

Much of the success of the exhibition was due to the brilliant and instructive lectures of Doctor Dixon, and his superb collection of lantern slides. We are pleased to be able to reproduce some of the pictures shown, though regretting their inability to convey an adequate idea of the beauty of the exhibition as a whole.

We sincerely trust our readers will find time and opportunity to visit the Kodak Exhibit at some point in its itinerary. The places where the exhibit will still be shown are as follows:

Columbus, Ohio, Memorial Hall, December 3 to 8.

Indianapolis, The German House, December 10 to 15.

St. Louis, Y. M. C. A., (Grand and Franklin Avenues) December 31 to January 12.

St. Joseph, Mo., Columbia Hall, January 14 to 19.

Kansas City, The New Casino, January 21 to 26.

Omaha, Chambers Hall, January 28 to February 2.

St. Paul, The Armory, February 4 to 9.

Minneapolis, Auditorium, February 11 to 16.

Milwaukee, Public Service Auditorium, February 18 to 23.

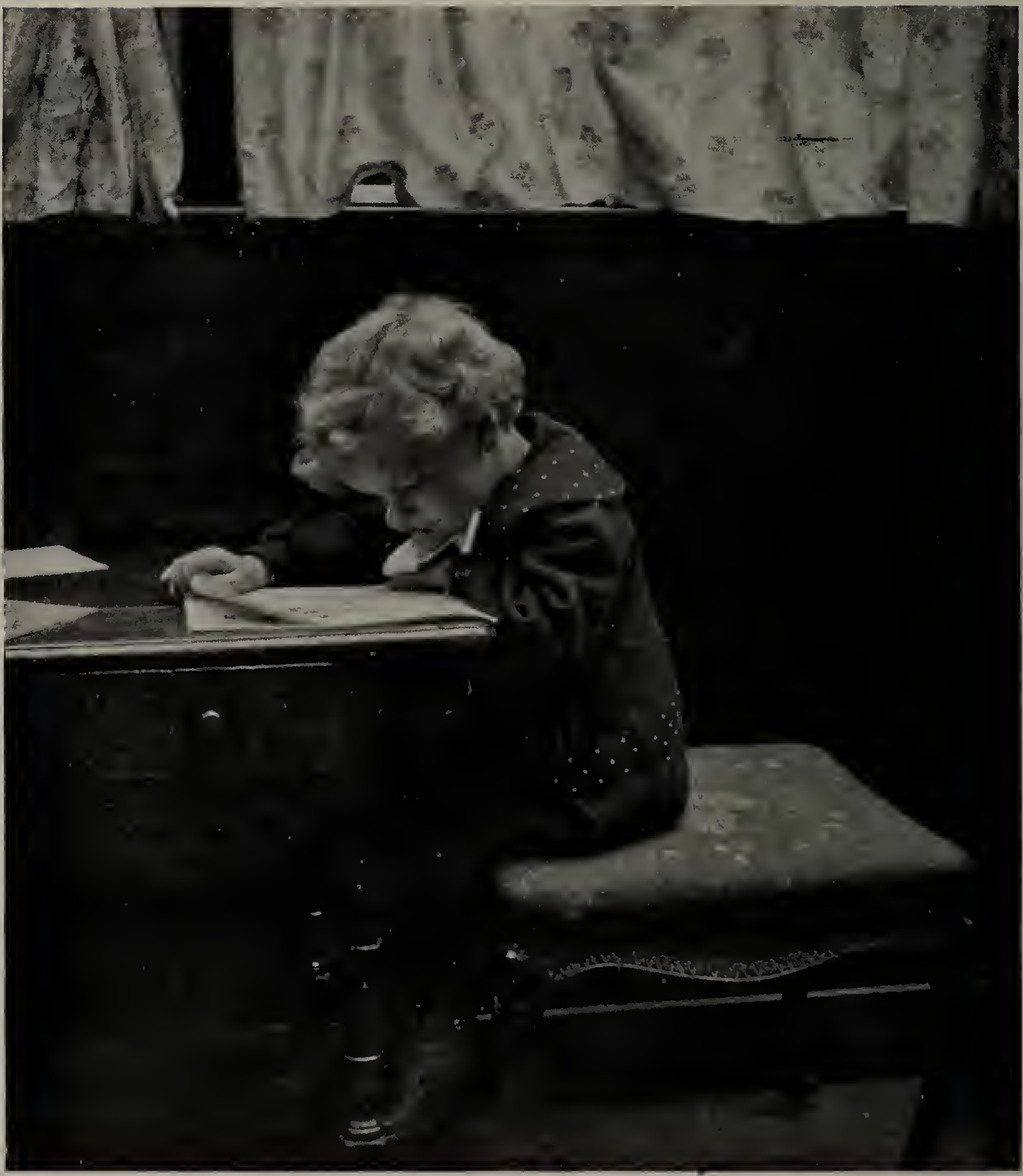
Chicago, Orchestra Hall, February 25 to 28, March 4 to 7.

Grand Rapids, Auditorium, March 11 to 16.

Toledo, Zenobia Hall, March 19 to 23.

Detroit, Light Guard Armory, March 25 to 30.

FREIGHT CARRIER ON THE NILE
By Miss Jean Sterling
(Kodak Exhibition)



A FAIRY TALE *By Harold Baker*

(Kodak Exhibition)

THREADING THE NEEDLE *By Nancy Ford Cones*

(Kodak Exhibition)

GETTING RESULTS

BY C. H. CLAUDY.

In Six Parts. Part I.

THE Editor of the PHOTOGRAPHIC TIMES has asked me to prepare these six stories on a subject of the greatest possible interest to every one connected with a camera, and of particularly vital concern to the man or woman just starting in the art, and with a desire to know how to get something fit to show,—with more interest in the results than the causes which enter into the making of it and with a greater concern with methods and means than reasons why and abstruse theory.

Consequently, these six stories will be mainly devoted to talks essentially practical,—"hows" and "whats" rather than "whys" and "what fors" being aimed at. Moreover, in order to be practical, the stories will be simple, and will not aim to take up the more advanced branches of photographic work, which any one can master from text books, provided a solid photographic education in primary branches be had as a starting point.

What I shall aim to reach in the minds of my readers, is a platform from which they can answer clearly for themselves the ever present questions affecting the making of every photograph. How to manage the camera, how to expose, how to develop, how to get good prints, how to after treat a negative, how to use the flash light, how to make good portraits, etc., etc.

But even before these questions are looked into, a few words must be said about the choice of an outfit. With full knowledge that this question is governed often by the state of the pocketbook, I want to suggest the following:

Buy a plate camera. Plates are cheaper than films and much easier to handle in development. Your enthusiasm will carry the extra weight with no effort for a long time, and the cameras of to-day can all be changed to film cameras very easily with film-pack adapter or roll holder, if, later, such change is desired.

Get a four by five camera. This is a very satisfactory size from which to enlarge, and yet small enough to keep down the expense of ruined plates.

Get a long-focus box—by which is meant a camera with a draw at least twice the focal length of the lens. Again, that means that the bellows should be extended less than half its possible length when the lens is in a position to take pictures. Such a box makes copying a possibility, and allows the lens to be split—that is, half of it removed and pictures made with the remaining half, twice the size of those made with the whole lens.

Get three trays, preferably glass, as cleaning easiest, and get them for five by seven plates. If the outfit is later enlarged, the larger trays will then serve, and, anyway, the use of the larger size compels you to use enough solution to properly cover plates and paper.

Get a tripod sufficiently heavy to hold a five by seven camera. Like the trays, it will serve for a possible larger outfit, and it is none too secure, ever, in a wind,—and a light tripod which shakes with every breath of air, is a nuisance.

Get a heavy focussing cloth, at least three and one half feet square, and preferably four feet, and have it double. Italian cloth is a good material.

Buy a good ruby lamp, not a cheap one.

Other articles can be bought as your

dealer recommends,—a graduate or two, a funnel, bottles, glass rods, printing frame, etc.

One more do,—or rather don't—don't buy an expensive anastigmat lens until you know what it is good for. A boy learning carpentry has has no use for a graduated mitre box—an architect just beginning can't use a micrometer calculator, and you can't use an expensive lens to advantage until you can cope with the rapid rectilinear lens which comes with the camera.

Having the camera, don't take any pictures until you know something about the instrument. Set it up, take it down. Do it again. Work the swing back,—the rising front, the side swing, if it has one. Take off and put back the back of the camera, or, if a revolving one, turn it around until you understand how it works.

Learn the shutter,—the mechanism in which the lens is held. If automatic,—working with a pressure of the bulb or lever, without setting, work it. If it must be set, set it until you can do so easily without looking at it. Work the diaphragm lever and note the opening in the lens grow smaller and larger. Thoroughly understand what everything on your camera does before you make an exposure.

Set your camera up somewhere, anywhere, and open the lens. Throw the cloth over your head and the instrument, and focus,—that is, by means of the screw or lever provided, work the lens back and forth until the image you see on the ground glass is clear and distinct. All of it won't be distinct, if prominent objects are in the foreground. Focus on these, then on the background, and observe the difference in the position of the lens. Refocus on the near objects and stop the lens down—that is, move the diaphragm lever until it points to say, 16, and again observe that background and foreground alike are in focus. Remember this. Stopping down the lens increases the depth of the focus; that is, the distance, in nature, which may be brought out sharply on the plate. The bigger the depth, the smaller the opening must be, for any one sized lens. There are lenses with no depth to speak of,—these are the very fast ones, and the very expensive ones. Other lenses have great depth, and no speed—these are those on cheap cameras, with what is known as "fixed focus" lenses,—lenses which cannot be moved for focussing. Your rapid rectilinear is a type between the two—fast enough for snap shots on sunny days—and with depth enough at the snap shot opening for most landscape and portrait work.

Extend the bellows nearly its entire distance, and remove the front lens by unscrewing it. Now focus same as before. You will observe that the image is less bright, and less sharp, but twice as large. It is less bright because the opening of the lens is the same while it is further from the ground glass, and so admits less light. It is less sharp because half the lens has certain optical faults, which corresponding faults on the removed half, neutralize, when both are used together. But by stopping down the lens, as before explained, some of these faults are obviated and a very fair lens results for average purposes. You know that when your picture is too small, and you can't get closer, you can increase its size by splitting the lens and using but half of it. But the lens is slower—four times slower, to be exact and the image not so clear, which must be remedied by stopping down, which still further decreases the speed.

As you will constantly meet with lens terms and need to understand about lenses, as you go deeper into photography, a few definitions may not be out of place.

Your rapid rectilinear is so-called because it is moderately fast and renders straight lines as straight lines. When split, it renders straight lines as curved, unless stopped down.

Your lens is a doublet,—that is, composed of two lenses,—with an air space between.

Your lens is a symmetrical doublet, because both halves are alike. Unsymmetrical doublets are usually convertible—that is, the front lens can be screwed in behind the rear giving three different combinations altogether,—normal, single lens, and converted lens—a three focus lens.

An anastigmat lens is one corrected for astigmatism, an optical error. So corrected, lenses can be made with relatively larger openings for their focal length and so pass more light in a given time. The more light the greater the speed at which a picture is made, and so, the faster motion which can be "stopped" or rendered motionless, on the plate. On the contrary, the larger the lens opening, the duller the day on which a picture can be made. Anastigmats have numerous other advantages, which need not concern us here. They are very expensive, and are useless to the beginner, as explained above.

Focal length of a lens is the distance from its "optical center" to the plate, when it is focussed on some remote object. For all practical purposes, the optical center of a lens is the diaphragm.

Your shutter is probably equipped with both a bulb and a finger lever. The bulb is the most useful of the two, as by its use, the mechanism of the shutter is worked with no jar. When the finger is used on the lever, the sudden downward pressure is apt to jar the camera at the moment of exposure and so blur the picture. On small hand cameras the bulb is sometimes dispensed with for space considerations. On such instruments as these, care should be used to press just quick and hard enough to make the exposure and not with sufficient force to jar the instrument.

Don't attempt to work with the camera in the hands until you have mastered the details of its use on the tripod. Get in the habit of setting the camera up with the lens directly over one leg of the tripod. Whether this leg is to be in front or at the rear depends on circumstances, but it should be one place or the other. In front, it is easy to tip the camera downwards,—in the rear the camera can be tilted up. When tilting the camera, either way, use the swing back—that is that part of the instrument which tilts, so that the back remains perpendicular even if the lens is raised or lowered by the position of the bed or bottom board of the camera. Attention to this point will insure straight lines in buildings and upright objects. Inattention to it will result in buildings which seem to lean, one way or the other.

To recapitulate, the results we have arrived at now, if we have thoroughly assimilated the foregoing are:

We have bought a camera.

We have manipulated it until we understand all its parts and how to work them, even if we don't know just what they are all for.

We know several things about lenses in general.

We have learned to focus, and to stop down, to get depth to the picture, or to make objects in different planes come in focus together.

We have learned to split the lens, to make larger pictures, and that such splits are slower, less bright and sharp and need stopping down.

We have learned what the shutter is, what it does, and how to make it work with both bulb and finger.

We have learned what the diaphragm

is and how to work it and at least one practical application of it.

We have learned how to use the swing back to correct leaning lines caused by a raised camera bed.

These are all necessary preliminaries, and may seem tedious but if we are to "Get Results" in the shortest possible time, we must learn the essentials even if we neglect the theories. In the next paper we will load and expose a plate or so, and try to get a grasp of the subject of exposure, and lighting. Thorough knowledge can only come by practice but a result, and a distinct and passable one, too, we can safely promise.

THROUGH A COURTWAY *By Arthur W. Walburn*

(From The American Annual of Photography for 1907)

A REFLECTING CAMERA FOR THREE FIFTY.

BY E. H. WILLIAMSON, JR.

ALL reflecting cameras now on the market contain as a component part, a roller blind shutter of the focal plane type, which lies directly in front of the plate and protects it from the action of the open lens until an exposure is desired. Owing to the short exposures given by such shutters, it is necessary to use a lens having a large working aperture, f 6.8 or greater.

Such lenses are expensive and not within the reach of every one. It is possible, however, for any one who possesses an ordinary folding camera with a detachable reversible back, and a rectilinear lens of not less than 6 inch focus, mounted in a "Unicum" shutter or any other shutter in which the speed dial moves during an exposure, to build an instrument giving a full sized reflected image up to the moment of exposure, with shutter speeds suited to his comparatively slow lens. The construction will require some little time, an ability with tools, but the trouble involved is well repaid by the convenience of such a camera. The cost, a table of which is given at the end of the paper, will come within the amount quoted in the title. Fig. 1 shows the camera with the right side removed, the crossed line parts denoting sections. Fig. 2 shows a front view, and Fig. 3 a perspective view of the mechanism of the shutter, etc. The construction is as follows:

From a wood mill get a piece of ¼ inch hard wood, such as chestnut, free from knots and with a straight grain, 4 feet long by 10 inches wide, and build the camera box (A), with sides 7 inches square, and open ends. It is made wide enough to receive the rabbet on the inner face of the camera back, (B) (usually 5¾ inches), with a close fit. Across the rear end of the box, at the top, is a strip (C), 1 inch deep, below which is fitted a partition (D) of cigar box wood, the full width of the inside of the box, and having a 4x5 inch opening in the centre. A strip (c) similar to (C) is set across the front of the box below the horizontal strip (e), which supports the lid of the camera. A horizontal partition (E), also the full width of the box, extends 5⅜ inches toward the front, and has a 4x5 inch opening cut in it, beginning ⅜ inches from the rear. The front end rests on the vertical partition (F), 5⅛ inches deep, having a three inch square opening in the centre. From the rear end of (E), a slanting partition (G) ex-

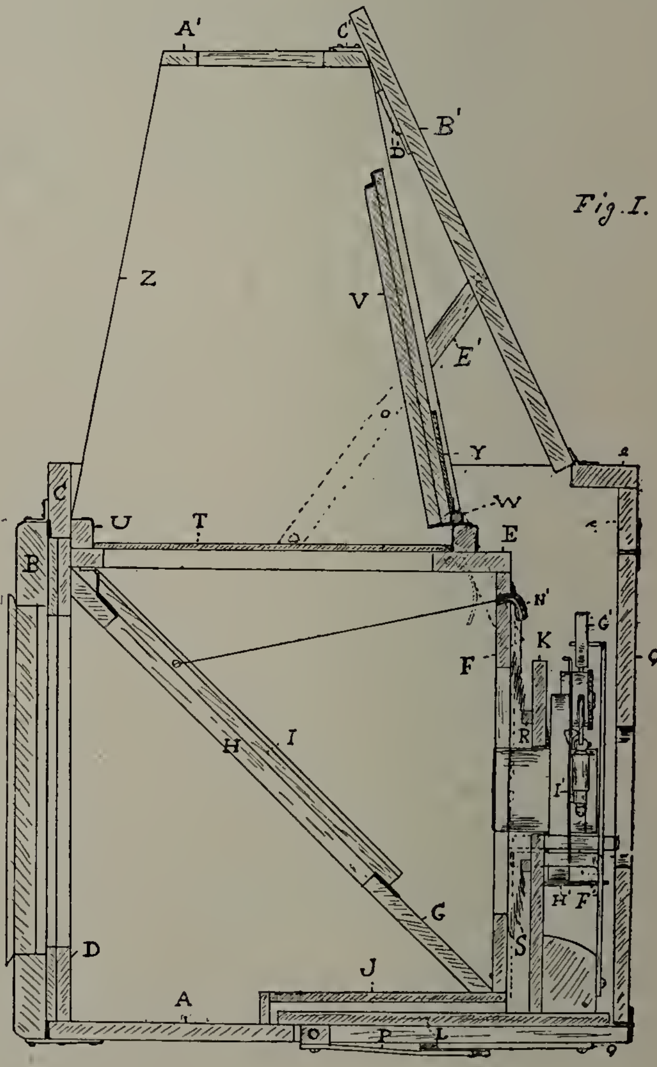


Fig. I.

tends at an angle of 45 deg. to the base of (F), and in this is cut the opening (H), 4½ inches long by 4¾ inches wide. Over this opening rests a shutter (I) 5¼ inches long and 5½ inches wide, having a piece of clear looking glass of the same size, fastened to its upper side. This shutter (I) is hinged at the rear end to the lower surface of the partition (E). A notch ½ inch deep and 3 inches wide is cut in the centre of the bottom of the vertical partition, and from this extends inward, the casing (J), 3 inches long and 3½ inches wide, the purpose of which will be shown later. The board (K) which supports the camera lens, is of heavy cigar box wood 2½ inches wide by 4¼ inches deep, and is attached to a baseboard (L) of similar wood, 2¾ inches wide and 4 inches long. This base is bevelled at 45 deg. at the sides and slides in similarly bevelled guides (MM2), and both slide and guides project into the casing (J) which prevents light from entering the interior of the camera around the slide. The lens board is further supported by the block (N).

A round hole of sufficient size to receive the rear of the lens, is cut in (K), the centre being 2¾ inches from the bottom of the box, and the ring which holds the shutter is screwed thereon. To the centre of the bottom of (L), at the rear end, is fastened the square block (O), which projects through a slot cut in the bottom of the camera. This block is connected by a 2¼ inch link of brass (P), to the 5½ inch lever (Q), pivotted to the left side of the bottom of the box. The camera lens is moved back or forth by this lever in focusing. To the rear of (K) is screwed a light frame of wood (R), 2 inches square outside, and between this frame and the 3 inch opening in (F), is placed a bellows (S) 4 inches long, 3 inches square at the large end and 2 inches at the small.

The bellows is made by constructing a form of wood and card board, conical in shape, of the dimensions given and covering it first with black muslin, on which are glued strips of Bristol board parallel with the ends, to make the folds. The strips are ⅛ inches apart and ½ inch shorter than the sides of the form. The outside is then covered with black sciver leather, free from pin holes. A quarter inch margin should be left at each end for fastening the bellows to the wood.

The bellows is folded in and out in pleats, using the card board strips as guides, and should be perfectly light tight, and flexible. The large end is then fastened by glue and small tacks to the inside edges of the hole in the partition (F) and the small end, to the outside of the frame (R). Over the opening in the horizontal partition is placed a sheet of ground glass (T), 4⅜ inches by 5⅜ inches, and closely surrounding this is a frame (U) ⅜ inches high, to the front of which is attached a trap door (V), fitting closely into the frame, with a projecting flange on three sides. This trap revolves on an ⅛ inch round brass bar (W), which is supported in two brass strips (XX), screwed to the sides of the box.

The trap (V) is supported on two strips (YY), which are soldered to the bar. The end of the bar projects ¼ inch through the right side of the box. To the frame (U) is tacked a conical hood or tunnel of focusing cloth (Z), 6 inches long, 5x6 inches at the bottom and 2½ x6 inches at the top. The panel (A) which supports the top of the hood, has an opening 1½x4 inches and is held to the hinged lid (B) of the camera by the bent strip (C) inserted in the socket (D). The lid (B) is held erect by the hinged arm (E).

Turning to Figs. 2 and 3, the forked lever (F) which is made of narrow brass strips, is pivotted by a screw to the face of the block (N), the upper arm being bent back to engage with the curved lug (G) which is soldered to the little screw at the top of the speed dial of the shutter. The short arm of (F) is bent back parallel with the side of the camera for one inch, the extreme end being again bent outward for ⅜ inches. The arm is pulled against the pin (H) by the rubber band, as shown, and a loosely pivotted wire (I) runs from the arm through the hole in the finger release of the shutter, terminating in a small hook. On the face of the left side of the partition (F) is fitted a brass slide (J) 2½ inches long which slides in bevelled guides (KK2), 5 inches long. It is provided at the top with an arm (L), which projects ¼ inch through a slit in the side of the box, and at the bottom with a larger arm (M), which projects ½ inch. The inner end of (M) is bent so as to extend outward, parallel with the side of the box for 1 inch, and lies just above the bent arm of the lever (F). The slide is held up by a rubber band. Close to the top of the slide (J) the partition is pierced with a ¼ inch hole and in this is wedged a bit of glass tube (N) bent as shown in Fig. (I).

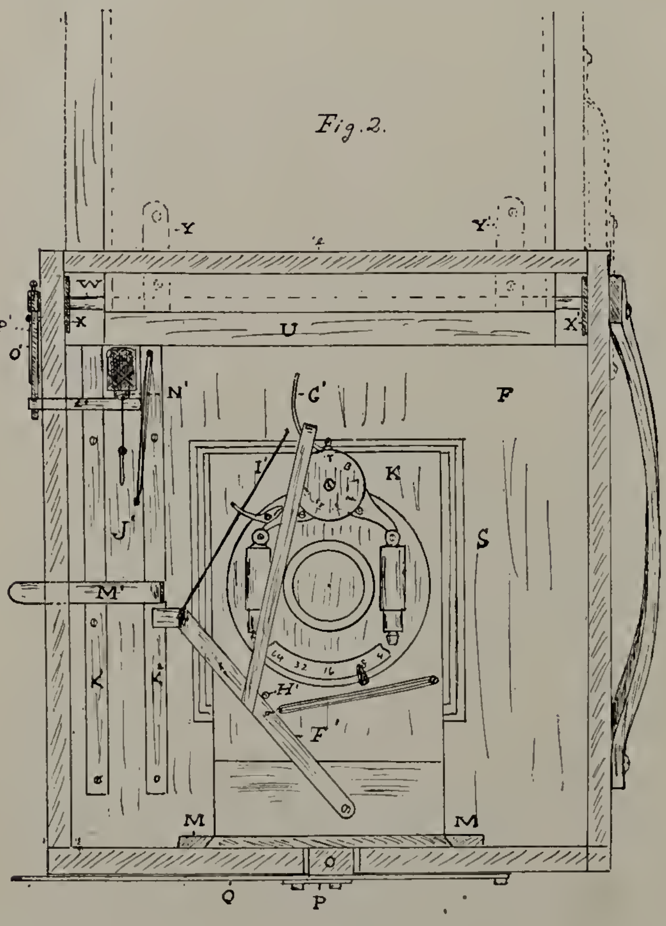


Fig. 2.

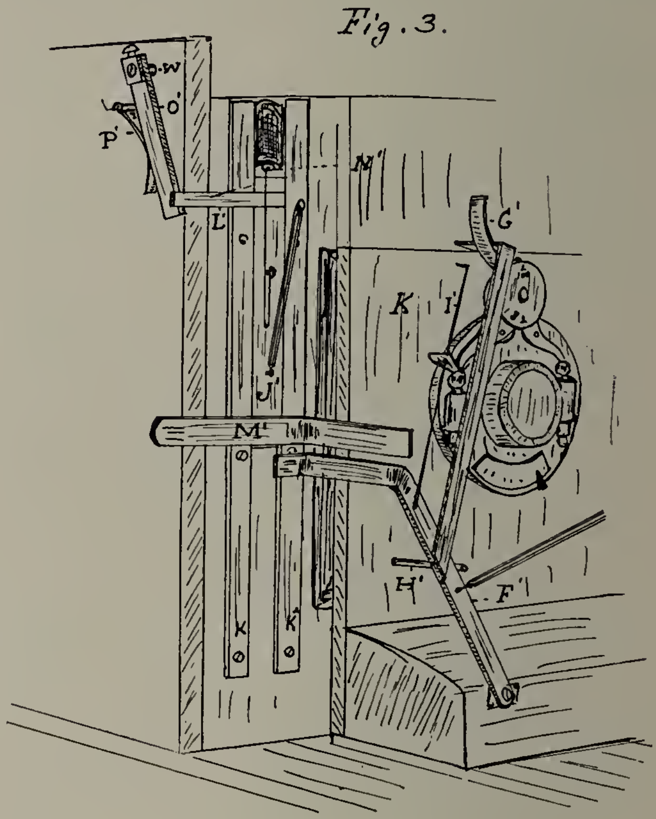


Fig. 3.

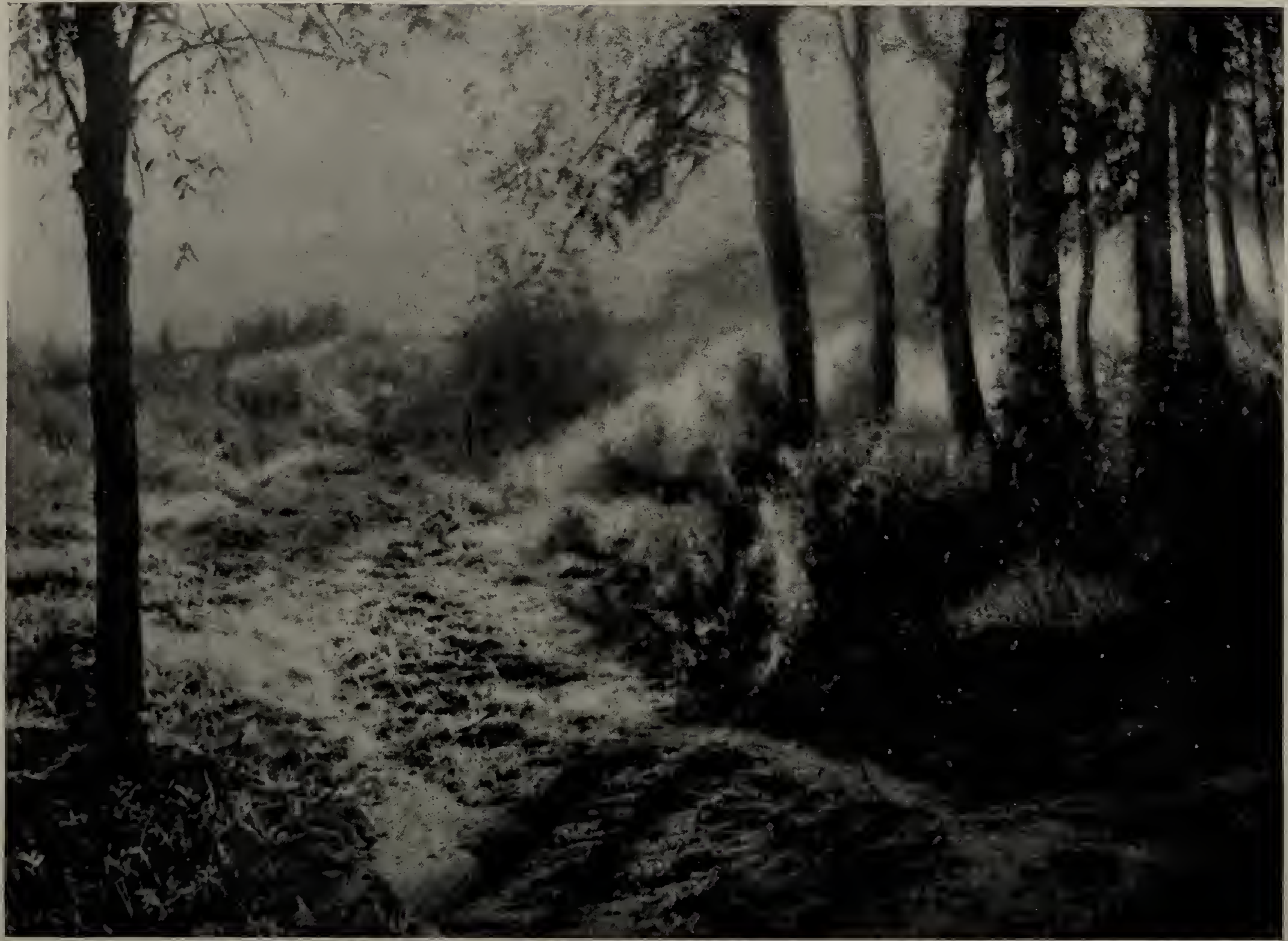
A piece of strong shoe thread runs from the side of the mirror (I), through this tube, to a screw in the slide (J) a little slack being allowed. A strip of brass (O) 2½ inches long and reinforced at the upper end, is drilled with an ⅛ inch hole and forced over the end of the bar (W), a small set screw being driven through both strip and bar. The spring (P) presses the bar against the arm (L) when the trap is raised. The camera back is attached to the box by short strips of brass screwed to both back and box, and to ensure a light tight joint the edges of the latter are faced with a double thickness of black velvet, as are also the back of the mirror shutter and the edges of the trap door (V).

All joints in the woodwork, partitions, bellows, etc., should be examined carefully for light leaks, and any such found must be stopped by glueing strips of sciver or passepartout binding over them. The whole interior of the camera, and all metal work except the shutter, should be painted a dull black, with a preparation called "Ebony Flat Black" varnish which is sold in ten cent cans. To the front of the box is hinged a front board (Q) which has a 1½ inch round hole opposite the lens. This is dropped when the camera is operated. It is held by a catch when closed. The entire outside of the box is now neatly covered with thin black grain leather, glued on, and to the left side is screwed a long strap of heavy leather, diagonally across the side, to support the hand when using the camera. A strip of sciver is glued across the lower edge of the trap (V), and the bar, to exclude light at this point and the glass tube (N) is similarly protected where it emerges from the wood The camera is now complete and is operated as follows:

A loaded plate holder is inserted in the back and the lid of the camera raised, after which the hood is lifted up and hooked in place. The shutter is set for an instantaneous exposure and the finger release pressed when the speed dial will fly back until the curved arm (G) strikes the lever (F) which will leave the shutter wide open. If it does not, the arm (G) must be adjusted by bending it. The arm (O) is pulled until the trap (V) is wide open, and the arm is caught by the projecting lug (L). The plate holder slide is now drawn and the object to be pictured is viewed in the ground glass finder at the top, which now receives the image from the lens. The object is focused by moving the lever under the camera, and at the desired moment the lug (N) is pressed down. This releases the trap (V) which drops, closing the top, and at the same time pushes down the short arm of the lever (F) closing the lens and resetting the shutter. By this time the slack of the cord from the mirror has been taken up and the latter is pulled up out of the way of the lens, a slight further depression causes the hook in the wire (I) to pull down the release lever and makes the exposure. It is, of course, essential that the mirror cord have enough slack to prevent the latter from being raised before the shutter is reclosed and it should be carefully adjusted accordingly, as should also the length of the wire (I). This camera will be found very satisfactory for all snap shot work within the speed limits of the shutter, such as street scenes, children, domestic animals, etc. It is not adapted for race courses or athletic meets. The new "Century" shutter which has a special lever to open the leaves after being set for a snap shot could be used in place of the "Unicum" by a somewhat similar arrangement of levers. The time required to make an exposure after pressing the lever is a little less than 1-5 second.

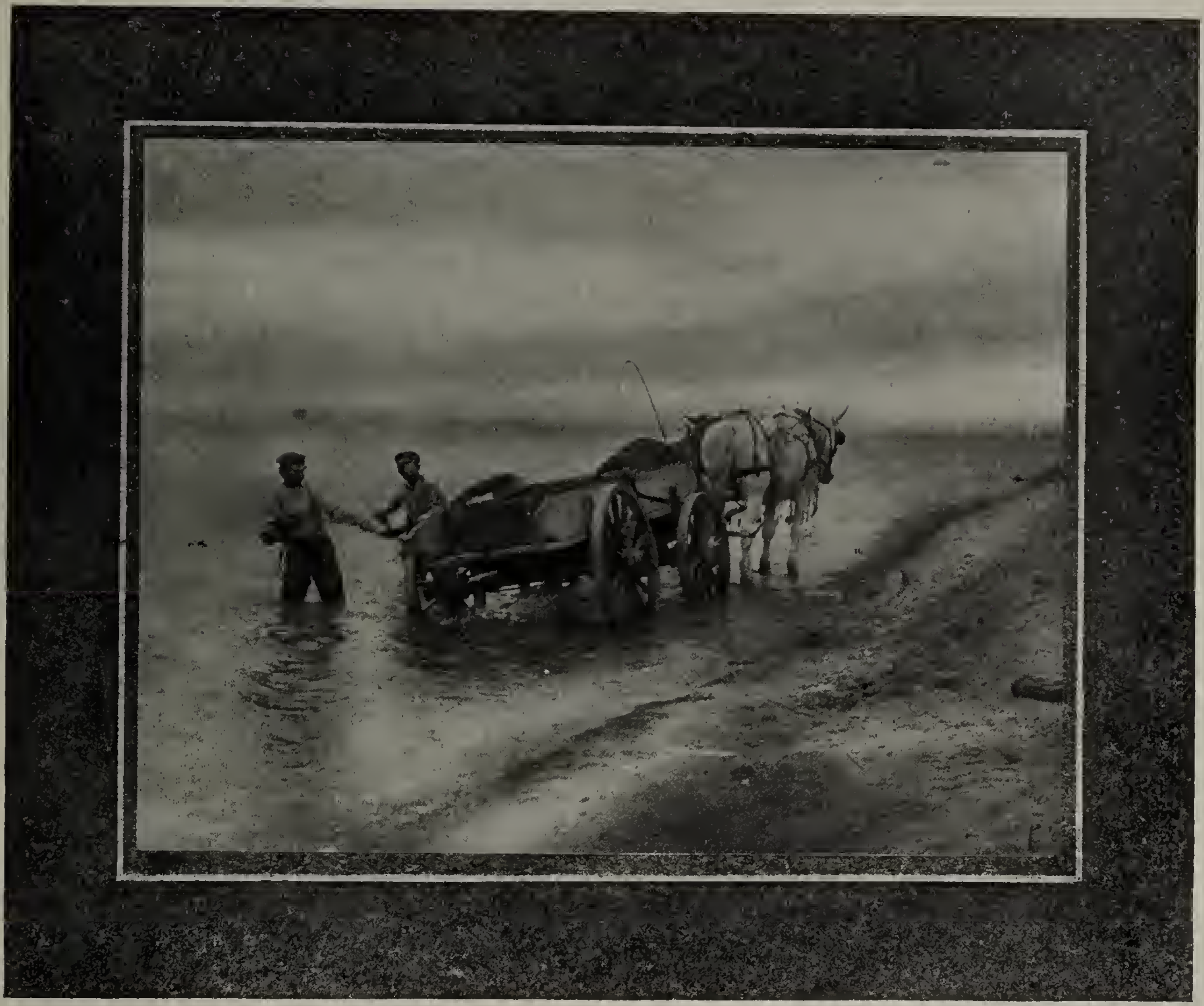
TABLE OF COST.

Four feet ¼ inch chestnut, 10 inches wide	.50
Three cigar boxes	.15
Thin black "sciver leather 10x12 inches	.30
Thin Black Grain leather 16x24 inches	.75
Looking glass	.10
Ground glass	.15
One foot round brass bar ⅛ inches	.10
Four feet ½x1-16 inch brass strip	.20
Focusing cloth for hood	.25
Black velvet 8 inches square (cotton)	.15
No. 20 sheet brass 6 inches square	.10
One dozen 4-40 machine screws ½ inch long, 4-40 tap, No. 41 drill	.25
Two dozen each No. 1 wood screws, ½ inch and No. 6 1¼ inch Passepartout Binding, Black varnish, Nails, Muslin, glue, etc.	.50
	$3.50



MORNING LIGHTS AND SHADOWS *By J. H. Field*

(First Prize December Competition)



THE GRAVEL DIGGERS *By Geo. C. Elmberger*

(Second Prize December Competition)

THE DECEMBER MONTHLY COMPETITION.

The entries this month though not so great in numbers, make up in quality. Our readers who have watched the improvement from year to year in the work of J. H. Field will not be surprised to learn that he again carries off the honors. Mr. Field long ago proved his mastery of the technique of photography, and each season has witnessed a growing strength in his interpretation of nature in all her various moods. That Mr. Field is a true artist is also demonstrated by his ability to produce portrait studies of rare merit.

His entry for this month "Morning Lights and Shadows," is rarely beautiful bit of landscape, poetic in the extreme, and possessing a breadth and atmosphere seldom attained by photography. It is noteworthy that the winning print was made on an eight by ten plate enlarged from five by seven, this affording the opportunity for just the proper diffusion. The negative was made September 15th about 6.15 A. M. on Cramer Iso plate, a low lying fog making the grass very wet and glistening.

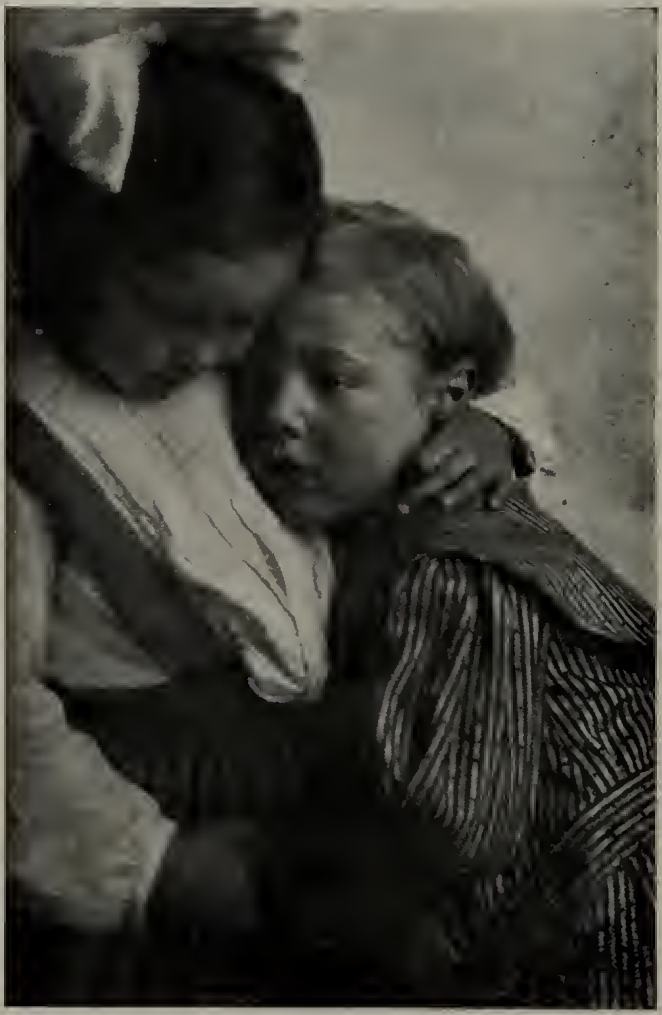
The second award goes to a nearly equal success. "The Gravel Diggers," by Geo. C. Elmberger. Mr. Elmberger has made the most of a commonplace subject, its chiefest charm lying in its exquisite tone values, practically every shade of gray being present, the whole presenting an effect delicate in the extreme. Although the data does not afford the duration of exposure, it is evident that the negative was fully timed and judiciously developed. The negative was made in July, 3 P. M. on Cramer Iso plate. The print sent is an enlargement on Rotograph Bromide which speaks volumes for the gradation capacity of this paper.

The first Honorable Mention presents one of those ever welcome and pleasing studies of childhood. Such studies from their simplicity seem easy to secure, but no one but the amateur knows how many failures preclude a success. In our opinion the picture would have been somewhat improved if a little more of the supporting arm of the older child had been suffered to remain, as the composition lacks strength owing to the weak support afforded by the small mass of white in the sleeve. The attitude of the children and the placing of the hands are, however, particularly happy, and bear out the title "A Sister's Care." This picture was entered by K. Stoel, negative made in July, 3P. M., studio light, bulb exposure, Seed 27 plate, Metol-hydro developer and enlarged on Rotograph.

The second Honorable Mention, "The Man With the Scythe," is quite an ambitious effort in depicting the life of the man beyond urban cares. The posing of all the figures is excellent and the three pictures as grouped are worthy of more than a passing glance. The series is entered by Lewis Emmert, no data, we regret to state, being furnished.

"Gathering Water Lilies," by D. H. Brookins received the third Honorable Mention. The general arrangement is good, but we should have preferred to

GATHERING WATER LILIES *By D. H. Brookins*
(Honorable Mention December Competition)



A SISTER'S CARE *By K. Stoel*
(Honorable Mention December Competition)

have the rear lines of the boat not cut off by the side of the picture as this interruption carries us at once out of the picture and renders it difficult for the eyes to return to the principal object of interest. This defect it is true, is to an extent obviated by the offending lines being nearly equal in tone to the surrounding masses. This is what would be termed a popular subject. No data furnished with this entry.

In these competitions we have endeavored to point out the defects in the winning prints, without recourse more than necessary, to technical terms, and to call attention to where improvement might be made in a manner readily understood by the tyro in matters artistic. That we have in a measure been successful is best evidenced in the wider interest in these competitions and in the increasing merit of the entries submitted.

THE MAN WITH THE SCYTHE (Copyright 1906) *By Lewis Emmert*
(Honorable Mention December Competition)

WASHING GLASS NEGATIVES.

BY A. OSWALD.

A GREAT deal has been written regarding the handling of glass negatives through the developing and fixing solutions but not much is being done towards improving the washing methods, which is the only part of the work that is really tiresome. My method for the last four years has been as follows: Procure an ordinary stoneware milk pan which can be found in nearly every kitchen, the round bottom kind are the best and most common, a one gallon size, fits a 5x7 plate and a half gallon size fits the 4x5 plates to perfection. Fill the pan nearly full of water and after rinsing the negative a minute or two in a basin of water, place it face or film side down in the pan, it will find its seat about one-third the distance from the top, being careful not to allow any air bubbles on the under side. Should any bubbles have formed by letting the plate down too fast they can be ejected by tilting the plate slightly and then allowing it to settle back in a horizontal position again. After the negative has soaked in this way for thirty minutes, it is ready for the drying rack. Please note, that there was no change of water in the operation of this method of washing

Some of the readers will be rather sceptical when they read the foregoing, but the idea is as simple as the method.

When the negative is placed film side down in water, the hypo being heavier, releases itself and drops to the bottom of the vessel. In the four years, that I have practiced this method, I have not lost a negative through carelessness in washing. The pleasantest part of this method is, that you can see the positive of the image by looking down into the pan while the negative is lying under water, no waiting for a proof to see how your picture is going to be. Try it and see how easy it is.

THE ROSE *John M. Whitehead*

(From The American Annual of Photography for 1907)

EDITORIAL NOTES

Of all the good advice we have seen offered the beginner—and the advanced photographer, none seems more worthy of attention than the following recently published in the *London Amateur Photographer*:

The landscape photographer bent on picture-making is like the angler—he misses more than he takes. This is not only true of the novice, but to some extent it applies to the expert. The fact is that it is difficult to recognize at a glance what will constitute a good picture. Furthermore, the ordinary photographic tramp actually does not see every aspect of the ground he covers. The reason is that his quest is too often conducted in a manner which may be likened to the superficial observations of a casual enquirer as compared with the trained investigations of a professional detective. Let us see how this comes about.

The photographer usually passes over more ground than he can possibly examine thoroughly, and his course is confined to a more or less direct route. With face set towards his objective, he hopes to see everything that is likely to present a suitable subject for his camera. He is like the traveller by rail who believes he is familiar with the whole country through which his train has taken him daily for years, forgetting that no small portion of that country has been hidden from his view by cuttings and tunnels. Thus, though the photographer may have carried his camera for miles, he has only actually examined critically a very small area. Possibly he has never *looked backwards* once on the journey.

The enthusiastic picture-maker cannot afford to be content with so perfunctory a method, and if he has not yet realized the advantage of a more systematic search for subjects, he should examine into the matter for himself. The result will surprise him. He will find that districts through which he has hurried on his way to others, which he believed were likely to afford him better opportunities, are themselves rich in golden possibilities, once he has made them the subject of systematic study.

The matter will bear looking into more closely. It does not need long training in landscape work to realize that point of view is everything. Therefore it behooves the photographer to make sure that he has tested every point of view of any likely subject before he concludes that it is unworthy a plate. A foot one way or the other may make the difference between a common-place view and a well-composed picture. An incursion into a field a few feet may reveal a picture quite invisible and unsuspected from the roadway. A subject which appears univiting, when viewed from the height of the observer's eyes, may take on a different and more attractive aspect when the camera screen is lowered to two ft. from the ground, or raised on some convenient eminence to a point above the normal line of vision. Thus by simple artifices such as these the scope for picture-making may be indefinitely widened, and a given area may be rendered enormously more productive.

Not only should the photographer look ahead and on either hand, but he should form the habit of casting occasional glances behind him, for many a good picture has been missed by assuming the subject unattractive on the grounds that it presented no special beauty when regarded from the direction in which it was approached.

The photographer must be an argus-eyed individual, "poking his nose" into odd corners, and searching diligently for just that bit of nature which will serve his purpose, even if it necessitate the placing of his camera in unaccustomed positions. In the writer's experience he has had to plant his tripod amidst a group of bee-hives, in the shallow margin of a pond, flat on the ground, in the fork of a tree, and on an asparagus bed (with the owner's consent.)

The novice should not forget that weather conditions may affect his choice of subject. A placid scene in calm weather with a cloudless sky may offer no inducements to expose a plate, but if the elements of a good composition exist, he will be well advised to revisit the spot when a stiff breeze is bending the tree-tops, and a stormy sky promises clouds on the negative.

Again, what is flat and uninteresting in noonday lighting, at morn or eve may become in every respect a desirable subject for the picture-maker.

Lastly, the photographer should cultivate the habit of mentally detaching from its surroundings just so much of the view as he judges will suffice for his picture, whereby he will be less likely to pass by a good thing. How often a charming picture is lost by being swamped in a redundant environment may be realized in the operation of trimming the print, when a drastic curtailment of the margin frequently effectually separates the chaff from the wheat, and reveals an unsuspected picture.

The moral of these remarks may be summed up in a few simple rules:

Cover your ground thoroughly. Test your subject from every point of the compass. Revisit the scene under different conditions of weather and lighting. Learn to restrict your subject to just so much as will constitute the picture. Remember the "tip" in regard to looking back.

GOOD WORK *By Robert W. Tebbs*

(From The American Annual of Photography for 1907).

PHOTOGRAPHING IN THE RAIN.

BY J. H. CRABTREE, F.R.P.S.

DON'T stay at home because it rains. Of course, if it "simply pours" you may please yourself, and probably you will make a wise choice.

Many of us have doubtless had varied experiences with the camera—in rainstorms, snowstorms, thunderstorms, frost and fog, sudden hurricanes and blizzards—and even from these untoward occasions we have resulting negatives of which we are justly proud.

Surely then, a gentle fall of rain need not damp our usual ardour or spoil our half-holiday anticipations. On a recent Saturday it was beautifully fair up to 2 P. M. Two of us had arranged to go by train with a half-plate camera to a specific locality, for the purpose of taking certain photographs which were intended to be put to valuable use afterwards. We were not intending to snapshot this, that, or the other which might *fortuitously* "turn up." We meant serious photography. As we sat in the train the rain began to batter the windows of the compartment with unwelcome vigour, and the weather chart was obviously anything but promising. It rained still more and more as we sped on. We got to our *locus* about 3 P. M., and how it rained! We saw it; we felt it. An umbrella and a focussing cloth did good service, but they did not stop the downpour.

Well, what was the upshot of all this "camereering" in the rain? Simply this—we obtained six half-plate negatives which in many points are superior to what I could have expected in unclouded sunshine. They do not convey the faintest idea of rain actually falling. The definition is all that I could desire; and considering the mild drenching we endured, I am not a little surprised at these six negatives. I used ordinary backed plates on buildings in the near foreground and stopped down to F22.

It certainly did seem somewhat strange focussing exposing, etc., under an umbrella, and passers-by gave us more than a transient glance. Still, it was an experiment which I thought *might* succeed; and so it did.

A few precautions are advisable for photographing in the rain:—

Provide yourself with a good, long mackintosh, and a waterproof cap. Catching cold is to be avoided as much as possible. It is better to go "by twos" on these occasions, so that one may hold a broad umbrella over the camera parts while the other is focussing and exposing. During the latter operation the umbrella must be held sufficiently high to be clear of the field of the lens. A goodly-sized hand bag (leather, or waterproof canvas) may contain the camera and slides. Keep the slides from wet and put them in the bag immediately after the exposures are made.

The main trouble will come with the lens; unless you are very careful the rain drops will lodge on its surface; this does not much matter when focussing, but these drops must not on any account be suffered to remain during exposure or the negative will be grievously affected.

Take with you a clean, soft silk or fine linen handkerchief; and just before exposing clear the lens surface of all rain drops while your friend holds the umbrella well over you. Then, when the lens and "coast" are both clear, operate the shutter or the lens cap, as the case may be. Then close all over with your focussing cloth, which preferably should be waterproof. Use as small a stop as is consistent with the definition required, and give full but not over exposure. I found three seconds ample under the conditions already noted. The temptation will rather be to over-expose; "rain light" is somewhat delusive and is more actinic than one might suppose.

There are many reflecting surfaces with which one has to reckon, and many rays of light which in fine weather would be absorbed by stones, bricks, soil, etc., are thrown back and illuminate some other parts of the view before the camera. Hence do not err on the side of excessive over-exposure. With a little bromide added to the developer, we can fairly balance any moderate over-exposure; but with the work under consideration I found it much better to avoid over-exposure, to add metol or rodinal to the ordinary developer—whether pyro or quinol—and eschew restrainers altogether.

Herein I have dealt with the use of the camera while rain is actually falling.

The after-effects of rain make quite another subject, and may be photographed to greatest advantage after a shower, when the clouds are well broken up and there is an abundance of water about by which the strong rays of light are beautifully reflected. This, however, is not the time when umbrellas are required. —*Focus.*

FLEUR-DE-LIS *Dr. W. F. Zierath*

(From The American Annual of Photography for 1907).

THE HEIGHT OF THE HAND CAMERA.

IN a recent number of *The Photographic News,* the editor has some practical suggestions regarding the proper height for using the hand camera.

A DEFINITION OF THE HAND CAMERA.

Strange as it may appear to many advanced photographers, there is still a vast amount of misconception existent amongst amateur photographers as to what a hand camera really is. By a "hand camera" it is of course, understood any type of camera whatsoever that is employed by being used in the hands without any further support than that given by the body. Many beginners have the idea that a "stand camera" is always a stand camera, whether used on a tripod or not, and a "hand camera"—when sold with that description—is always a hand camera, no matter under what conditions it is used.

This belief frequently leads to confusion when classes at exhibitions are restricted to "hand camera work."

A camera of any size or description that can possibly be held or used in the hands, without the support of a tripod or other stand, is a hand camera. We have seen 15 by 12 cameras used in the hands under these conditions with as much expedition as a quarter-plate reflex, and we have frequently used a 10 by 8 field camera (with a view-finder attached) as a hand camera for street scenes.

No matter what form the camera takes, whether it is a large studio camera or a Ticka, provided it is used in the hands alone it becomes a hand camera, and can be described as such. But cameras that are specially made and sold as hand cameras cease, for the nonce, to come under that description when they are used on a tripod, and photographs obtained under these circumstances should not be entered in any competition or exhibition as "hand camera work."

THE POINT OF VIEW.

No matter the type of camera used, the position in which it is held, or the height the lens is from the ground at the time of exposure, has a material effect upon the perspective of the resulting picture.

The above digression as to what constitutes a hand camera may be usefully considered in this respect, for when the camera is used on a tripod the normal height of that support usually decides the question of height, unless very special work is undertaken that requires a very low or very high point of view.

When the camera is held in the hands the height of the instrument is a matter that receives very little attention as a rule, and the fact that the lens is pointed at the object photographed and a general idea of the view is gained from the view-finder, no thought is given to the difference to be obtained in the result by raising or lowering the camera.

The points that should be considered by the serious hand camera worker are:—firstly, the extent and nature of the view or subject; secondly, the height of the photographer; and thirdly, the height of the standpoint (*i.e.,* the ground on which the photographer stands) in relation to the view or subject.

THE FOREGROUND IMPORTANT.

The height of the camera in relation to the extent and nature of the view or subject should depend to a great extent upon the nature of the foreground.

If there are no objects of outstanding importance or height in the foreground, a low point of view—such as may be obtained with the normal hand camera in which the photographer has to look down into the finder—may be used with advantage.

Here the effect is to magnify the height and size of what is nearer the camera to the exclusion of more distant objects.

Take, for instance, a landscape view with a grassy meadow in the foreground. If the camera is used tripod-high or at the level of the eye, the foreground is seen merely as a flat expanse that appears very uninteresting when rendered into monochrome.

By keeping the camera low the foreground grasses or inequalities of the ground become magnified in relation to the distance, and the near part of the composition assumes the importance necessary to help the middle distance. When, however, the foreground consists of objects that have height, and are important enough to obscure the middle distance—as, for instance, figures, animals, or bushes, etc.—the camera should be held much higher, and the eye-level will usually be found to give the most satisfactory perspective.

It is reasonable to suppose that what the eye sees and is satisfied with, will also, apart from colour, appear perfectly correct in the photograph.

AN ELEMENTARY RULE.

Generally speaking, the eye-level is the correct position at which to hold the hand camera. Much disappointment is caused at times, especially among beginners in photography, when negatives taken with an ordinary box-form hand camera are developed; the perspective of the view appears entirely altered from what was seen originally by the eye.

The reason for this has been that whereas the view has been seen at the normal height of the photographer, the lens has secured the view that the photographer would have seen had he been kneeling.

In street-scene work and snapshots, including near figures, the advantages of holding the camera as high as possible are very obvious.

The height at which the camera is held can be compared at once with the elementary lesson of the point of sight and line of sight inoculated at the art schools.

It is obvious if a straight horizontal line is drawn from the eye of the observer in any direction everything that is at the same height as that line will appear level with the eye.

Take, for instance, a level street scene. If the photographer is of normal height, the heads of everybody in view who are also of normal height will appear in a straight line as far as the eye can see.

If the photographer kneels so that his eye is at the level of the lens used in the usual position of the average hand camera, the line of sight is still a perfectly horizontal one, but the middle waistcoat buttons of all the men in view will now be in a straight line and not their heads. The heads and shoulders of the nearer men will completely cover and blot out those behind them, and this is the effect seen in the photograph taken with this view point. The near figures appear unnaturally tall in relation to those behind, and less of the general view is seen than would be the case if the camera was held at the level of the eye.

In many cases, however, it is advantageous to hold the camera above the head, as when working in a crowd. In this case the ordinary sunk finder is very useful, as the camera can be held upside down, and if the instrument is held at arm's length above the head the view can be easily seen by *looking up* into the finder.

HEIGHT OF THE PHOTOGRAPHER.

It may be argued that a tall man holding his camera breast high secures much the same point of view as a short man holding his camera at the eye-level. This is only partly true so far as it applies to the appearance of the photograph to a third person, but from the point of view of the photographer the results of the short man, taken at the eye-level, are likely to prove more pleasing to him than those of the tall man taken at a foot or so below his point of sight.

Beginners have frequently remarked that they get far finer results with their camera used on a tripod than when used in the hand. The reason—apart from the fact that more care in the matter of focussing and exposure is usually bestowed on tripod work than snap-shots with a hand camera—is that not only is the point of view more nearly the same as that of the eye, but the image has been seen on the ground-glass and its possibilities and final effect ascertained.

THE REFLEX CAMERA.

For this reason the reflex camera forms a striking exception to the statement that any camera used below the eye-level does not give so satisfactory a result as when used with a higher point of view. The user of the reflex camera sees and focusses his picture—right way up—on the large focussing finder. This is really the only picture he sees at all, and if it appears satisfactory on the screen, he takes it and gets exactly what he anticipated. The actual view seen at the normal eye-level does not concern him, or at most only offers a motif. Only those workers who have revelled in the use of a smoothly working, well-equipped reflex camera can thoroughly appreciate the feeling of assurance that the negative will produce exactly the view seen on the screen at the moment of exposure.

Users of other cameras will do well, therefore, to have both a direct vision-finder and one of the sunk "brilliant" type fitted to their hand camera. They are both useful under certain conditions, but the direct vision-finder will probably assist in obtaining the best results.

SUMMER *By Walter C. Scott*

(From The American Annual of Photography for 1907).

NATURAL HISTORY PHOTOGRAPHY.

BY A NATURE LOVER.

OF all branches of photography, the one which is perhaps the most exacting in the requirements of patience, perseverance, and good temper, is that followed by the Natural History Worker.

How can we justify this remark, when the pains necessary to acquire even moderate success, in the more commonly followed paths of photography, are so well known to any one who does more than "press the button" and leave "the rest" to others.

It is because in most branches the worker is not so dependent upon conditions entirely beyond his control, as is the Naturalist, who not only has to combat the difficulties common to all serious photographic workers, but has in addition to seek out, and patiently wait and watch for opportunities to secure his pictures, to a far greater extent than in other branches.

RING OUZEL'S NEST
SNOWDROPS

WILD PRIMROSES
SONG THRUSH'S NEST

He must have a natural, or an acquired love for his work and be able to enjoy regions of loneliness, and periods of waiting, entranced by none other than the sounds and sights of nature around him, to afford him the inspiration he needs at the supreme moment to secure a picture, it may be of a bird, animal, or insect which has perhaps seldom, if ever been successfully photographed before.

Although it is within comparatively recent years that attention has been devoted to this most instructive and fascinating branch of photography, we are fast being supplied with standard works on Natural History subjects illustrated by photographs taken direct from nature, in place of the drawings formerly used which lacked the natural representation secured by the photographic art.

The field for operations is immense. A great many objects are obtainable with apparatus of the ordinary kind. A suitable camera, with a good lens, and an ordinary tripod are all that are generally considered necessary for the worker to commence with.

It is, however, when he begins his difficult work, and attempts to secure pictures of almost hopelessly placed subjects, from a photographic point of view, that he finds the ordinary apparatus either fails him entirely, or leads to a great waste of time in obtaining the pictures he longs to secure, and it is most often those pictures which are difficult to obtain that are of the greatest interest and pecuniary value.

The camera should be strongly made, but not necessarily heavy. The 4x5 size, with triple-extension, of a type which permits racking out of the back, as well of the front is preferable, a swing back will be found useful at times—and the more silently the shutter works the better. The lens should be one which is capable of working at a very wide aperture, owing to the short exposures which often have to be given in poorly lighted situations, such as amongst foliage or long grass, or within crevices and corners of all kinds.

The support for the camera requires the most careful consideration, owing to the fact that objects desired to be photographed are often to be found in all but inaccessible situations. The tripod head, and legs, should therefore, have an inexhaustible range of movements, enabling the lens to be speedily brought to, and fixed at any conceivable angle in relation to the head, moreover each leg should have independent movements of its own, and not be restricted to the usual fixed position at the points of attachment to the head. We know of no other stand embodying all these unusual movements but that invented by an English patentee and known as the "Swincam." With this stand a camera of practically any type or size can be readily fixed bodily in either a horizontal or a vertical position, or at any intermediate angle, and can also be inverted when so desired.

An illustration of this capability of the stand is given below, but it by no means represents the most exceptional arrangement in which it is possible to place it. For example the normal height of an ordinary tripod is often inadequate, either because the object is high up above the eye level, or on marshy ground, where the legs have to be thrust down some feet to secure perfect rigidity. Either of these conditions are met by facilities provided for elevating the head of this tripod from 4 ft. 9 in to 7 ft. 3 in. at will. The picture reproduced below of the water lily, and coot's nest, are examples in point where the "Swincam" proved of the greatest advantage, similar conditions occur repeatedly in Natural History Photography.

Focussing in this branch of work requires great care, as often the object is in such close proximity to the camera, and

not infrequently a small stop has to be used for the exposure. It is found a great convenience to have the focussing cloth formed like a bag, one end of which is held by elastic around the camera body and the other end contracted to meet the operator's eyes, and held in position by elastic loops passing round his ears.

The advantages of this arrangement over a loose cloth are obvious, it leaves both hands free for the exact adjustments incidental to this class of photography, and the cloth is secure in windy weather.

When photographing shy birds, in fact most birds or animals, it will be found necessary for the operator to resort to some method of concealing himself and his apparatus from view, (with the exception of course of the lens). There are many methods of doing this which may be resorted to according to the surroundings. Frequently all that is necessary, when working amongst foliage or green herbage, is a green cloth thrown over the camera, after the spot, where for instance a bird may be expected to alight, has been focussed. The photographer then retires some distance from the camera, having attached some extra yards of tubing to the shutter release, and bulb in hand, concealing himself, as much as possible but still commanding a good view of the spot focussed, awaits his opportunity.

He may be fortunate and have to wait minutes only, sometimes, however, it is hours before an exposure can be made, but whether the time spent be shorter or longer, he is very often rewarded by securing some realistic picture, of the class of which many prominent workers have contributed such a store of exquisite examples for our benefit and delight.

WATER LILY

COOT'S NEST

The illustrations used are from Photographs made by P. J. Butler with a "Swincam" Camer Stand, invented and paten by William Butler, 20 Crosby Road, Birkdale, Southport, England.

MONTHLY FOREIGN DIGEST.

TRANSLATED BY HENRY F. RAESS.

A Short History of Orthochromatic Plates.

THERE is still some doubt as to who should be credited with the discovery of color sensitive plates. Is it Prof. H. W. Vogel or his assistant, S. Sellack? (both of whom are dead.) It was long known that an addition of AgI to AgBr or AgCl increased the sensitiveness to green and yellow rays. S. Sellack investigating this phenomena made a number of tests, (in 1871) he thought that there was a connection between absorption and chemical action of the rays. In these tests no emulsions were used, instead he fused the pure silver salts until they formed glass like masses, so as to exclude foreign substances. In this condition AgCl is colorless, AgI light yellow and transparent, while AgI for violet and blue, and AgBr a mixture of the two latter are orange-yellow. In the photographic tests AgCl was only sensitive to the extreme violet, while AgBr has a deep yellow color, but from violet, to bluish-green. A mixture of AgI-AgBr was sensitive even for the green. The increasing yellow and yellow-red coloring of the silver salts also causes an increasing sensitiveness to the blue-green and green portion of the spectrum, that is, for those colors which are absorbed by the silver salts. S. Sellack says: "I have found that optical and chemical light absorption coincide exactly. All colors which are optically absorbed by the silver haloids effect a decomposition. And further, the haloid compounds of silver are all changed chemically through the action of all the rays which they absorb in a marked degree." These lines form the ground work of orthochromatic photography, they contain in clear words the law, the so-called "Vogels law." Two years passed without any practical results following this important discovery. About this time (1873) Vogel received some Wortley plates from England, which he found to be unusually sensitive to green. Remembering the discovery of S. Sellack, Vogel thought that the plates contained a substance which absorbed green to a marked degree, this conjecture proved true. The plates had been, by the manufacturer, covered with a yellow coloring matter for their preservation. By washing a plate well with water he found that it had lost its sensibility to green. Observing this, Vogel added a coloring matter (corallin) to the AgBr which absorbed the yellow and made it sensitive to the yellow-green rays. Thus orthochromatic photography was discovered. The relation of Vogel's discovery to that of S. Sellack is best described in Vogel's own words. "My experiments confirmed fully the suppositions first promulgated by Herschel and Draper, and (later) acknowledged by S. Sellack, of the connection between absorption and chemism, but more extensively is S. Sellack's theory that silver haloid salts are changed chemically only by those rays which are absorbed in a marked degree. My tests show that the sensitiveness of photographic plates not only depends upon the optical absorption property of the sensitive silver salts, but also on the optical absorption properties of the added substances." The pith of the matter remains that the use of added coloring matters as sensitizers solely belong to Vogel. S. Sellack later pointed out as a new and very interesting fact, the possibility recognized by Vogel that photographic plates can be made sensitive to green, yellow and red through the addition of color. By his own trials, as carried above, colors were not used, but on the contrary, different silver compounds possessing various colors of their own were used.

Dr. Neuhauss in *Photographische Rundschau*, Vol. 20, No. 8, '06.

Improvised "Gas Light" Paper.

If at any time say at night a print is wanted on gas light paper and only a printing out paper is on hand, a fairly good substitute can be made according to Trauchaut with the aid of the following solution:

English.		Metric.
33 ozs.	Water	1000 c.c.
45 grs.	Potassium Bromide	3.0
15 grs.	Potassium Iodide	1.0
8 grs.	Copper Sulphate	0.50

The paper is placed in the above solution for five minutes and then washed for another five minutes, the excess of water removed by means of filter paper and the sensitized paper dried in a dark room. When dry it is manipulated in the usual manner.—*Photographische Rundschau,* Vol. 20, No. 12, '06.

Developing a Positive in the Lantern.

A pretty and interesting diversion is the development of a positive in the lantern. On account of its greater transparency and lower sensitiveness, a silver chloride emulsion plate should be chosen. After exposing the plate, it is placed in a glass trough in the lantern, the trough to contain the developer. To prevent the lantern light from acting upon the plate, a piece of red or yellow glass should be interposed, or the developer suitably colored. If ferrous oxalate or citrate is used no additional coloring is necessary, but if any of the organic developers are used, phenolphthaleine or crocein, scarlet red should be added. —*Photographische Rundschau,* Vol. 20, No. 12, '06.

Retouching with Silver Salts.

It is really a sin against posterity that silver prints are retouched with charcoal, graphite and other permanent pigments. All silver prints have the tendency to fade. Long before the light tone of the picture injures the general impression, the small dark spots and lines become visible, and with time become worse and spoil the picture unless the old retouching marks are washed off and replaced by those of a lighter color. E. Coustet reminds us that for several years it has been suggested to use darkened silver salts. The whole picture would then be homogeneous, and fade evenly without the small defects becoming noticeable. He suggests retouching with the same kind of material as that which constitutes the print. A sheet of paper to be blackened by development or some other method, the film is removed by means of warm or hot water, for use it is kept in a beaker glass and heated every time it is wanted. As heating may prove objectionable, the film may be dissolved in glacial acetic acid.—*Photographische Rundschau,* Vol. 20, No. 12, '06.

ALBUMEN VERSUS GELATINE.

ACCORDING to some recent writers it seems to be an admitted fact that prints on albumen paper are more permanent than are those made on gelatine papers. Also that they possess better all-round qualities. The latter may at once be conceded——according to the majority of opinions. But the former may be open to question—or at least so far as the modern method of produced albumen pictures is concerned. It is an undisputed fact that there are hundreds of albumen prints in existence that were made in the fifties and early sixties that, up to the present, show no actual signs of deterioration so far as the image itself bears evidence. The whites in some instances may show some trace of yellowness, but the actual image is as strong and vigorous as ever, These facts are proof that albumen prints have been made that are, to all intents and purposes, permanent pictures. This is very strong evidence, and it is probable that it is on this fact that some writers assume that albumen prints are more stable than gelatine ones, seeing that so many of the latter show unmistakable proof, after a very short life, of material change.

Will, however, the albumen prints of the present day prove of the same stability as those of the earlier days of photography? We question it, as quite different conditions prevail now from those that existed some forty or more years ago, and it may be well to explain to modern workers what they are, although it is not the first time that the subject has been dealt with in these columns. It may be pointed out, at once, that prior to about 1860, all the albumen prints were, of course, made from collodion negatives, and they were toned and fixed in a combined bath, which was an exceedingly strong one and contained only hyposulphite of soda, chloride of gold, and water. The proportion of hyposulphite of soda was usually ten ounces to the pint of water. The toning of the prints was a slow operation, usually taking an hour or more and frequently much longer, so that there was no question then about their being completely fixed long before the desired tones were obtained. Frequently, however, the bath was used long after it was quite exhausted of its gold, as is often obtained by sulphur toning. Yet many of these sulphur-toned prints have withstood the test of time, and though the lights, in many cases, have become yellow, the images themselves are practically intact.

Let us now examine the conditions under which these old photographs were made. In the first place the paper was distinctly different from the albumen paper of to-day. It was but comparatively slightly albumenized, and the albumen was heavily salted—containing about double the amount of chloride that is used at the present time. This paper was sensitized on very strong solutions of nitrate of silver—usually from eighty to a hundred grains to the ounce of water, and no organic acid whatever was added. Here we see at once some of the differences prevailing then and now. But this is only a part and not, perhaps, the most important one. The negatives made up to the time just referred to were developed wth pyrogallic acid and were made very dense, and often took a whole day to print. The kind of density then was, again, different from what is termed density in gelatine negatives. Although the high lights were so very strong the shadows were clear glass, and, as a consequense, when printed, the shadows were strongly bronzed. The bronzing, however, disappeared in the strong toning and fixing bath. When the prints were taken from the printing frame the image usually showed strongly on the back of paper, thus proving that it was largely in the paper itself, and not confined, as at present, only to the albumen on its surface. It necessarily consisted of a large quantity of metallic silver, which required, as a matter of course, a considerable deposition of gold in order to obtain the rich purple tones then in vogue. Hence it will be realized that by reason of the large quantity of metal of which the image was composed it could better resist deleterious influences than would the extremely attenuated ones such as we get on modern lightly salted and lightly sensitized albumen paper when it is printed from weak negatives of the present day. If anyone will take the trouble to unmount one of the very early albuemn prints, and examine it by transmitted light, he will at once see how exceedingly strong is the image, and how much it is in the paper as compared with a modern albumen pcture.

In the early sixties iron generally superseded pyrogallic acid as a developer, but the negatives were still made very strong and dense. In fact at that time density was one of the qualities looked for in a good negative. It was about this period that the alkaline method of toning became universally adopted, and the old toning and fixing bath abolished. Few old family albums there are that do not contain some *carte* portraits, taken about that time, that still show no sign of fading. At that time long washing was considered necessary in order to secure stability, and ten or twelve hours were often given. In some cases even the prints were left in water from the Saturday night until the Monday morning. This long washing was, of course, a fallacy which has long since been dispelled, and it obviously had some injurious action on the pictures, yet owing to their robust constitution, they withstood it. But we much doubt if albumen prints of the present day would do so without a considerable loss in tone and vigour.

Apart from the strongly salted and sensitized paper that used to be employed at the period to which we refer, it will be seen from what has just been said that the negatives, by reason of their great vigour, were an important factor in the case, as they caused so much metal—silver and gold—to be reduced in the printing and toning. Weak negatives were of no use with the old albumen paper.

The object of this article is to point out that the old albumen prints made forty or fifty years ago, good as many of them still are, cannot be taken as conclusive evidence, as some writers seem to have done, that present day albumen pictures, made on the modern highly albumenized and lightly-salted and sensitized paper, printed from comparatively feeble negatives, will prove so much superior, as regards permanency, to those made on gelatine ones—all things, as a matter of course, being equal in the care bestowed on their production.—*British Journal of Photography.*

* * *

THE DEVELOPER.

BY DR. FREDERICK GRAVES.

THE most important of reagents in photography to the beginner at least, is the developer. Which is he to select from the number of good formulæ, and how must he use it?

The choice of a developer entails the examination now of quite a formidable list of chemicals, and it is not always easy to decide on a formula. For although, after all, the result in the negative is always much the same in the eyes of the beginner, a printable picture of black and clear glass, nevertheless the pictorialist and the portraitist know that the choice of a certain reagent makes all the difference in the result.

Some developers give a hard, dense negative, others give a soft, veiled image, some are specially suited for rapid work, others for soft portraits, and again others are most suitable for clean, strong work, such as copying. The ideal developer would seem to be one that is simple and easy of control, clean and admitting of considerable latitude in exposure. Also it should not be one that will harden the film too much, should not readily cause fog, and yet be capable of prolonged use, and of variations in action. The developer consists generally of a *reducer* (as pyro), an *alkali* (as carbonate of soda), the accelerator, a *restrainer* (as bromide of potash), and a *preservative* (as soda sulphite. But we have some developers that are much simpler, some indeed where one substance alone will give an action. During the last few years a large number of new reagents have appeared, all manner of highly complex substitutions and phenyl derivatives.

Pyrogallic Acid, or benzol trihydroxyl, $\mathrm{C6\ H3\ (OH3)}$, the old-fashioned pyro still has its users, and its many combinations are too well known to need any description. Pyro gives good strong negatives, makes the best of a good plate, and is easy to use. Pyro-ammonia, though old-fashioned, is quick and gives strong results. Pyro-soda is suitable also for negatives on ordinary plates, but it gives in some hands much softer and more even gradation. Plenty of fresh solution must be used or the oxidation products interfere with its action. With pyro the staining is a disadvantage to many people. We may use acetone in place of an alkali, and this gives a clean plate with no fog or stain. Pyro-ammonia is also liable to fog and the fumes are rather unpleasant to some people.

Hydroquinone, or quinol, is clean and slow, gives rather strong contrasts by itself, though this is useful in copying and line work where pure black andwhite with no delicate half-tones are wanted. It should be worked at not less than 60 degrees. It gives a rich black deposit.

Adurol is a simple developer, and gives soft results; the high-lights come up quickly, it is very soluble, and a caustic alkali is not necessary. It gives a grey-black deposit, good density and fine detail.

Metol (sulphate of methyl paramidometacresol) is a favourite, clean and quick developer, free from stain, strong and useful for short exposures, detail soon appears and density follows easily. It gives soft negatives, and the action should be carried fairly far, as it loses density in fixing. It gives a greater scale of gradation than hydroquinone, but less contrast and mixtures of the two, hydroquinone and metol, in which each helps the other where lacking have become very popular. The deposit is blue-black, and where soft detail is desired this is a very good mixture. Metol has the unfortunate property of sometimes producing sores on the fingers of those who dabble much in its solutions.

Pyrocatechin ($C_6 H_6 O_2$), a benzine derivative, is a good developer but does not keep well in solution unless a layer of paraffin be kept on the surface to prevent oxidation. Pyrocatechin and katchin have the peculiar property of allowing a combined development and fixation to go on when mixed with a formula with hypo.

Katchin is very soluble, does not stain, and is useful for stand development. It keeps well, can be used over again and without signs of fog, it is energetic in action and very sensitive to bromide of potash. With bromide papers it gives warm, black tones.

Glycin (para-oxyphenyl-amido acetic hydrochloride) is somewhat slow, steady and regular, very suitable for stand development and for scientific work. It gives good, yet soft, detail, and plenty of contrast.

Rodinal (para-amido phenol hydrochlorate) can be used for plates, lantern slides, bromide and development papers, P.O.P., for quick shutter work and short exposures; it is cheap, too, gives clear grey-black negatives, soft, with delicacy and detail.

Ortol (methyl-o-amido phenol) is clean, useful for plates or papers, it gives results somewhat like those of pyro-soda, but it does not stain either films or fingers and it can be used repeatedly. Here, again, as with metol, development should be carried pretty far. Ortol is largely used for lantern plates.

Rescorcin (an isomer of hydrochinone and pyro-catechin) is a failure, strange to say, as a developing agent, though its isomers are such good ones.

Amidol is a very useful reagent for over-exposed plates, and where there is a lack of strength and contrast. A good snapshot developer.

Eikonogen is very useful for hand cameras, and in single solutions. It can be used over again. A very good formula is: Eikonogen, 3 parts, are dissolved with soda sulphite, 12 parts, in boiling water, then add potash carbonate, 5 parts (water, 100 parts). This substance in combination with quinol gives some splendid developing mixtures.

Benzine has given us many derivatives that have proved excellent developers, and we shall probably get more, the newer reagents of the phenyl family are quick and clean, and in consequence of this are suitable not only for plates but for lantern slides and papers.—*Focus.*

EVENING ON MOBILE BAY *By Arthur M. Dealy*

(From The American Annual of Photography for 1907)

LENS STOPS, AND THE IRIS DIAPHRAGM.

BY COLVILLE STEWART.

ONE is often recommended to use a small or a large stop, for various purposes, in the lens, and most cameras are nowadays provided with several; thus even the cheap box-form hand camera usually possesses F/8, F/16, and F/32, whilst the rapid rectilinear lenses supplied with most stand cameras sets have "iris diaphragms," ranging from F/8 to F/64. More expensive lenses still we find working at an aperture of F/5.4," and so on, whilst some of the most recently introduced lenses, for portraiture, work at a much larger aperture still.

Now there are several good reasons for using stops of different sizes on different occasions. In the first place, if we mounted a plain lens in a plain brass tube, it would have no stop or diaphragm at all; if in the lens tube we were to fix a disc, with a hole in it, so that if you looked through the tube you would only see the central portion of the lens, we should have inserted a stop—or diaphragm. The smaller this stop is, the sharper would be the definition obtainable in a photograph taken with it, but clearly, as we prevent more and more light from passing through the lens the smaller we make the stop, so the exposure given will have to be increased. There is thus a two-fold advantage in being able to change the size of the stop; firstly, if we want a tremendous lot of detail in a picture, and plenty of contrast, we use a small stop rather than a big one; secondly, if the light is very bright, and we are fearful of over-exposing with a large stop, we use a smaller one, and thus cut down the effect of the light—or *vice versa*.

But what do F/8 and F/16, etc., mean? Well, you must understand that the object of a lens is to concentrate the rays of light from the subject photographed on to the plate. Every single ray which strikes the lens parallel to its *axis* passes through a certain fixed point, called the *focus*. The distance between this point and the lens is called the focal length, and is denoted by the letter F. The focal length of a quarter-plate lens is usually about 5½ inches, that of a half-plate lens about 8 inches, and so on. Stop F/8 means that the hole, stop, or diaphragm used in the lens is in diameter one-eighth part of F (the focal length of the lens) in width. Similarly, when using F/11, we are only using a circular portion of the lens, whose diameter is one-eleventh of the focal length, and so on.

Now, the chief point you must bear in mind when altering the lens stop or iris diaphragm, is that any such alteration will mean a different length of exposure. Let us suppose that we find by experiment, or by an actinometer (we shall talk about actinometers very shortly, by the way), that a quarter of a second's exposure would be required for a certain subject, when using F/8, then with F/11 we should want half-a-second, with F/16 one second, and so on. Cut out this little table, or, better still, commit it to memory:

If with F/8 we require 1 second's exposure,
with F/11 we shall require 2 sec. exposure
" F/16 " " " 4 " "
" F/22 " " " 8 " "
" F/32 " " " 16 " "
" F/44 " " " 32 " "
" F/64 " " " 64 " "

As an instance of the convenience of suiting the stop to the light, the following example may be quoted. An open landscape is being taken, the sky being bright, but the sun obscured; an exposure of a twenty-fifth of a second is considered necessary with F/8. The sun suddenly comes out very strongly, and only a quarter of the exposure is therefore necessary. The shutter will not work at anything less than 1-25th sec. By simply stopping down to F/16, four times the exposure is required; hence we give the 1-25th sec. in safety.—*Amateur Photographer.*

PEACH BLOSSOMS *By James R. Iglick*

(From The American Annual of Photography for 1907).

BOOK REVIEWS

The American Annual of Photography and Photographic Times Almanac for 1907, George Murphy, Inc., 57 East 9th St., New York City Selling Agents. Price in paper, 75c., postage 17c. extra; cloth $1.25, postage 20c, extra. The American Annual is an ever welcome visitor and this volume is of more than the usual interest. It is evident that much attention has been paid to the pictorial feature, as the illustrations are more numerous than usual and of exceptional merit. While containing pictures by well known workers, the *Annual* also has many superb pictures by photographers comparatively unknown; in this respect the publishers of the *Annual* have been pioneers, as it has always been their endeavor to bring out as much new work as possible, and many of the now well known workers owe their public introduction to the *Annual.*

The table of contents includes articles on almost every photographic subject, and each written by an authority. Albert Stanley Hull describes an exceedingly simple and practical enlarging apparatus, that may easily be constructed by any one, illustrated by diagrams fully explaining use and construction. Richard Trotter Jeffcott has condensed a whole cyclopedia of good practical information in his article "Not Told of in Text Books." Robert E. M. Bain tells how to make artistic borders for prints. W. W. Lakin an expert carbon printer fully explains this beautiful process. J. Ellsworth Gross the advertisers' photographer writes of children as Photographic Subjects, and illustrates his story with some charming examples. Milton B. Punnett, a chemist of international repute talks enteringly on photographic chemicals. William Archibald offers a method for preventing double exposures. Bob Tebbs tells of the woes of the newspaper photographer and gives us some extra fine examples of newspaper photography. Dr. R. W. Shufeldt, again handles the nude in a masterly manner. Picture making after the Fire in San Francisco is a story of absorbing interest told by Edgar A. Cohen, the illustrations, telling in a most graphic manner of the city's destruction.

Spencer Hord, the former editor of the Photographic Times and *Annual* affords some good advice to writers for publication. These and many other articles form the main section of the book. In addition there are the latest formulæ for every photographic process, a revised list of American Photographic Societies and many other good things so numerous as to prevent full notice in this brief review.

We are informed that over one-half of the entire edition has been sold, so do not delay in ordering your copy from your dealer.

Camera Work No. 16, October, 1906, (Quarterly) Subscription $6.00 per annum, single copy this issue, $4.00. Published and edited by Alfred Stieglitz, 111 Madison Ave., New York City. It is always a pleasure to examine a copy of this most sumptuous work on photography. Mr. Stieglitz certainly knows how to get out a work that appeals both to the lover of fine photography, and of beautiful books. The fine letter press combined with exquisite taste in binding, paper and appropriate mounting of the reproductions are all a joy to behold. If you have a photographic friend to whom you wish to make a Yuletide offering, have his name entered as a subscriber on the *Camera Work* mailing list,— and the hinges of your friendship will not grow rusty —at least for another year.

One of the geatest charms of *Camera Work,* is the faithful manner in which the original prints are reproduced. While it seems a pity to think of desecrating the volume by the removal of the plates, almost every one is suitable for framing—a valuable feature for any one who prefers to give wall space rather than shelf space for favorite subjects. The issue of which we write has a dozen fine examples of the work of famous French amateur photographers, seven plates by Robert Demachy, three by C. Puyo, and two by Renée le Bègue.

The text comprises the following articles: "My Experience of the Rawlins Oil Process," by Robert Demachy; "The Recent Exhibition—Some Impressions," by Chas. H. Caffin; "The Photo Secession Exhibition at the Pennsylvania Academy of Fine Arts—Its Place and Significance in the Progress of Pictorial Photography," by Joseph T. Keiley, and "The Element of Vanity in Exhibition Work," by the same author.

NOTES, NEWS AND EXTRACTS

An Exhibition of Photographs by Members of the Photo-Secession, will be held at the Little Galleries of the Photo-Secession, 291 Fifth Avenue, between Thirtieth and Thirty-first Streets, New York, opening on November tenth and closing December thirtieth. The galleries are open from ten A. M. till six P. M., daily, Sundays excepted.

A Universal Photographic Exhibition is to take place in Dresden from May to September, 1910.

It will not be confined to photographic productions (pictures of artistic and scientific character) and the diverse kinds of utensils and requisites; it is intended to afford a comprehensive view of photographic art industry to its full extent. The making of cameras, the working of optical and graphical establishments (for heliogravure, phototype, rotatory reproduction), etc., will be shown in full work on the premises.

The interest of public authorities has been secured for the exhibition, and distinguished specialists as well as reputed firms in Germany and abroad have promised their support. The co-operation of photographers' associations and photographic periodicals of every country will be invited to contribute that the great object in view a complete representation of photography, may be successfully attained.

The management of the undertaking has been entrusted to the German Photographers Association (located in Weimar), which is engaged with the preliminary arrangements, in union with the Dresden Society for the promotion of Amateur Photography, and a considerable number of makers and dealers of the branch.

Gold Medals for a Competitive Exhibition of Genre Pictures. To stimulate art photography the Grit Publishing Company, of Williamsport, Pa., offer a gold and silver medal for photographic art studies, in a competition open to professional and amateur photographers of the United States and Canada, entries to be made through the Photographers' Association of Pennsylvania and exhibited at the Association's exhibition to be held at Williamsport, Pa., April 23-25, 1907.

For further information concerning entries, apply to E. E. Seavy, Secretary of the Photographers' Association of Pennsylvania, New Castle, Pa., previous to April 20, 1907.

Photographers' Association of Wisconsin. The Executive Committee of the Photographers' Association of Wisconsin held its annual meeting at the Republican Hotel, for the purpose of arranging for the eleventh annual convention, to be held in Milwaukee in 1907.

All Officers were present, viz.: B. J. Brown, President; W. A. Pryor, First Vice-President; W. J. Hillman, Second Vice-President; A. A. Bish, Treasurer; J. M. Bandtel, Secretary.

The Republican Hotel was selected as the official headquarters for the 1907 convention, and the Masonic Temple assembly and banquet halls as the place for meetings and exhibits.

The convention dates were fixed for April 23rd, 24th, and 25th, 1907.

Interested parties may obtain full particulars of the forthcoming exhibition from J. M. Bandtel, Secretary, 477-479, 11th street, Milwaukee, Wis.

Blue Glass. A piece of blue glass is very useful for amateur photographers when doing landscape work. It will prevent a lot of disappointments. When one is confronted by a scene full of colour, say golden furze, purple heather, etc., just look at the view through the blue glass. The objects will lose their relative colour beauty, and we see the scene through the glass as we may expect to get it when using ordinary plates. Blue focussing screens have been suggested and are, I believe, used by some workers.

Opening of the Daguerre Memorial Institute to the World. Promoting the Highest Advancement of Photography in America. At Winona Lake, Indiana, one of America's Greatest Chautauque Assemblies, a Monumental Building has been erected and dedicated to the honor of M. Daguerre and to the preservation of gems and works of the masters of photography. In this Salon, the only one perhaps of its kind in the world, are now assembled several thousand dollars worth of photographic masterpieces, to which it is the pleasure to add others from time to time that it may become of recognized authority, be far famed and known as one of the world's greatest photographic Salons. This Salon is now not only bidding to be known as one of National reputation, but foreign nations are clamoring and seeking to know its meaning.

That the fame of this Institute may grow more bountiful and become one of acknowledged merit; that the general knowledge may be advanced and assist in raising the moral, the educational and professional standard to a higher plane; that the labors of the genius of merit may not be lost and in the future we may look upon them and learn their meaning, the managers of this Institute have resolved that the highest honors possible be given to the works of the masters and that he be rewarded for his labors and loves, they have decreed to award a Diamond Medal for the best picture exhibited in their annual meet of 1907 at Winona Lake, Indiana. This medal shall be known as "The Diamond Medal of Honor," and bear an inscription of the title of the picture for which it was awarded and the name of the Institute by which it was given; and the picture receiving this honor shall be hung in the Salon as a permanent exhibit, its award be inscribed thereon with date and name of maker. It shall be insured, copyrighted and protected and all glory and honor possible shall be ascribed thereto.

In addition to the Diamond Medal other awards will be given, among which will be a certificate of Special Distinction to be given to all pictures chosen and considered worthy to be hung on the walls of the Institute as a temporary or loan exhibit. Thus exemplifying your reward in the effort to lift up the honors of photography that all may feel and more fully realize and appreciate the good photography has achieved in the moral advancement of civilization, education and commerce.

CONDITIONS OF AWARD

No picture shall be passed upon for this honor that is not properly titled. Should the excellence of the picture chosen for this honor be judged not to equal the one chosen as best at our last annual meet, then the trustees reserve the right to retain the medal.

Publication and use of picture shall be under control of trustees.

Pictures shall be passed upon by two distinct sets of judges. The one selecting a number of three to five pictures, the other select the one. Any false claims made by winner of medal forfeits all honors, and at request of trustees the same shall be surrendered.

Honors are open to the world. Indiana only excepted. Geo. J. Parrot, Chas. W. Neiswagner, George Graham Holloway, Trustees.

The Social Feature is not overlooked in the Wisconsin Camera Club. A Hallowe'en party and dance was given on Hallowe'en which was especially well attended. The rooms were tastefully decorated with pumpkins, autumn leaves, etc., and the electric lights covered with shades representing pumpkin blossoms. The dark room was turned into a witches cave illuminated only by the faint yellow light of an artificial moon. There Miss May Hughes reigned supreme as the witch fortune teller. Old fashioned games were played and apples passed around. The affair netted a neat sum for further decorations of the club rooms.

At the last formal meeting of the executive committee which followed close upon the visit of Mr. Robert Sleeth of Pittsburg, Secretary of the American Federation of Photographic Societies, it was decided to join the federation and secure the next American Salon for Milwaukee in 1907.

Club matters are progressing favorably—a number of backgrounds having been lately added to the equipment as well as an electric enlarging apparatus. The membership is on its way to the one hundred and fifty mark.

Blocking out Skies. It is often necessary to block out a sky on a negative altogether, s that it will print white. There are several ways of doing this, but the simplest and quickest—not, however, the most permanent—is the smoke method. Hold the dried negative glass side down over a piece of lighted camphor which gives off a very black smoke the glass side will soon become blackened. Then with a soft rag wipe off the superfluous smoke over the landscape portion. Great care must be taken while handling the negative, and while printing, as the blacking (soot) is easily damaged.

"When to Stop Development." Contrary to popular opinion, I do not attach very much importance to the appearance of the negative as seen by transmitted light, and the less the negative is held up close to the light and looked through, the less fog there will be. But the appearance of the densest parts (highlights) on the back of the negative is a valuable guide. The reader, however, must be careful to notice that this varies with different brands of plates, so that for the same degree of contrast or printing density, the highlights may show quite distinctly with a thinly coated plate, while they would be barely visible in another and more thickly coated plate. But so long as we keep to one brand of plates this back appearance is a very useful and valuable aid in knowing what sort of contrast the negative will have.

To Cut Glass. This is a useful accomplishment, since it can so often be taken advantage of both in picture framing and in cutting down old quarter-plate negatives for lantern slide cover-glasses. Probably many photographers have refrained from trying their hand at glass-cutting, because they imagine that a diamond is necessary, and naturally grudge the expense, for it is not generally known that an efficient wheel cutter, which will last twelve months with moderate use, can be fought for sixpence.

The *modus operandi* is simplicity itself. First select an absolutely smooth flat surface, on which to place the glass. A good table, free from warp, covered with a piece of felting or velvet cloth answers the purpose, but be sure it is perfectly flat, for the least curving of the surface will result in the glass breaking the moment any pressure is brought to bear upon it. Next carefully measure off the amount to be cut, and, using a broad piece of wood as a ruler, run the wheel along it not using too much force, and yet getting the steel to bite the glass. After one or two strokes turn the glass over and repeat the operation on the other side, keeping, of course, strictly to the line of the first incision, and the glass will suddenly fracture evenly and neatly. Any projecting piece can be afterwards broken off flush with the cut edge by the use of notches in the handle of the glass cutter; these notches are not made in every instrument, so it is as well to see that one is purchased which has them. In cutting negatives, it is best to begin on the film side, the gelatine biting the wheel, and presenting a surface to the ruler which is not too slippery.

Water. Pure water is not found in nature, owing to the fact that it dissolves a portion of whatever it comes into contact with. Rain is the purest form of natural water, but contains certain gases which it collects from the atmosphere during its descent to the earth. Water taken from wells, springs, rivers, lakes, etc., differs very much, according to the nature of the earth or rocks over which it passes or upon which it lies. Among the various substances found in water may be mentioned calcium, magnesium, and iron in various forms, sulphates, chlorides, and a large variety of vegetable substances.

If we bear in mind that toning and developing are very delicate chemical operations, it is a source of wonder that the results obtained are as good as they are. When a gold bath is made with water that is strongly alkaline, the prints will be muddy, flat, and lack brilliancy. In the platinum bath the results are often worse, precipitating the platinum, causing slow toning and a waste of material. In the hypo bath it is often the cause of yellow whites. It is very important that we clear the water of these impurities as far as possible if we desire to obtain the best results. A very simple and easy way to do this is to get an empty whisky barrel, remove the head, clean barrel thoroughly, and fill it with water. Ground alum is dissolved in hot water, and sufficient added to the barrel of water to turn litmus paper red. It is thoroughly stirred and allowed to settle for twelve hours. Carbonate of soda is then added to bring the water to a neutral point. We can then allow this to settle and use this water for first washing, for baths, and all washing between baths, until after the prints come from the hypo, when they may be washed in the regular tap water.—*The Professional Photographer.*

For Perfection in Lantern Slides. Always use a backed lantern plate either for slides made by contact or in the camera. Brilliancy and freedom from halation are thus attained in the slide.

When making slides by contact, carefully remove any projections upon the negative, or the lantern plate, so as to be sure that the two plates are in good contact. Dust upon either the negative, or the lantern plate, and projections at the edge of the negative, caused by the gelatine frilling, may prevent the two plates from coming into contact.

Protect the edges of the lantern plate and negative from stray light which may strike the edge of the glass, and, being refracted upon the sensitive surface, produce fog.

Running of the gelatine film, when the slide is heated, in the lantern, is caused by the gelatine film having absorbed moisture in which the gelatine dissolves when the slide is heated. This exasperating result may be prevented by warming and varnishing the slide; and again warming the slide and cover-glass, so as to remove all moisture, before binding the slide.

Tap water frequently holds in suspension a very fine clay, which is deposited when the water is allowed to stand in a vessel for some time. It is advisable to wash the plate in a vertical position in running water, completing the washing by rinsing with distilled water.

Lantern slides ought to be dried in a vertical position, and precautions taken to prevent any portion of the slide coming into contact with dust, which may settle upon the wet gelatine film, or may be gathered by the wet film from the edges of the negative rack, or the mantelpiece and wall.—*The Mawson pamphlet.*

Natural Backgrounds for Portraits. So many writers advise the use of a plain or artificial background, says J. M. B. in the *Pall Mall Gazette,* that one would think Nature never provided a background suited to its purpose. The fact is, the plain background in outdoor portraiture signifies a desire on the part of the photographer to shirk part of his task. It seems fairly obvious that, for subjects with which the light is clearly an outdoor one, a natural outdoor background ought to be employed. The difficulty, of course, is in the selection of the background, for of natural backgrounds it might well be said that "when they are good they are very, very good, but when they are bad they are horrid." The points to remember are that the background should not be obtrusive, should "go back," and should in every way fulfil its great object, which is that it should keep in its proper place in the picture, and not compete for the observer's attention with the portrait proper. Some diffusion of focus will often conceal minor deficiencies in the background, but this diffusion must not be carried to the extent of reaching the woolly and spotty stage of fuzziness. The background may preferably be in shadow, so as to give full value to the delicate high lights of the portrait itself, yet should not be so dark as to compete with the shadows. Anything like a sudden transition from light to dark in the background is to be avoided, and, whatever the contrasts may be in the portrait itself, those of the background should invariably be subdued.

Good natural backgrounds, of course, are not to be found everywhere, and the selection is undoubtedly difficult. But for real outdoor portraiture they are most certainly the right thing.

Elaborate Cameras. Here are a few remarks which may well be thought over by those who are thinking of buying a camera. A camera is simply a weapon, and the responsibility lies .with its wielder The most automatic form is the beginner's fixed focus snapshot camera, wth no stops and no variation in its shutter speed. With this, almost no thinking is necessary beyond the choice of the object to be fired at; but the moment a higher type of machine is procured the responsibilities begin. Better mechanism means more decisions to be made, and every decision means trained thought, unless the result is to be left absolutely to chance.

This is often the cause of very real disappointment, when a beginner thinks that his new and better camera means better pictures. This result will not follow unless his mind has also developed equally with his equipment. A new movement in a camera is a hindrance rather than an advantage, until the want of that movement has been felt and understood. There is a large number of adjustment to be made in a delicate instrument, and any one of these, if misjudged, may obliterate the value of the whole effort. Moreover, in hand camera work, all these things have to be thought of and settled practically at the same moment.

For anything like successful work, it is necessary to know what you want. The elaborate mechanism of a first-rate camera is useless unless the mechanism of the brain is in good working order behind it. The brain and the camera are two parts of one apparatus, and it is the brain, not the mechanism, that produces pictorial quality.

"The Essential Requisite is to Learn to See." This is the pithy sentence in which "Orexis," writing in the *Country Gentleman,* sums up the argument contained in the foregoing paragraphs on cameras. Too few, alas! never do learn to see, nor even learn that they must learn to see before they can hope to succeed in any form of pictorial art.

Ferro-Prussiate Transparencies. There is nothing better for the purpose than a substratum of gelatine made by soaking 1 oz. gelatine in 5 or 6 ounces water until it is thoroughly soft, when it should be dissolved by gentle heat, The gelatine solution should be filtered through two or three thicknesses of muslin, and poured upon a glass plate, and placed on levelling screws to settle, when it can be stored in an airy place to dry. A cneaper plan would be to use up some old negatives, after first removing the photographic image, which can be done by immersing them in the following solution:

Water	4 oz.
Hypo	1 oz.
Potassium ferrocyanide	120 gr.

The bath should be freshly mixed, and the plate should be immersed until the image is entirely eaten out, and then it should be thoroughly well washed in running water, for half an hour, and placed to dry.

Markings on Glossy Print. The peculiar marks are commonly known as "slug markings," and they are entirely due to airbells imprisoned between the print and the ferrotype plate. Strange as it may seem, these are generally cauesd by too vigorous a use of the squeegee. If the print is well soaked and placed upon the ferrotype plate, which should first be thoroughly wetted, the squeegee should be lightly passed over it, making the first sweep from a little beyond the centre, and across to one end, and then again (reversing the plate end for end) from a little beyond the centre across and over the other end of the print. Only a light pressure is necessary, just sufficient to expel the surplus water, which will carry all air with it. If you exert much pressure in order to drive out the last particle of air and water, it is most likely that you are by that very vigour drawing some air between the print and plate by the power of suction, and so causing the very trouble you wish to avoid.

To Remedy Scratched Negatives. The best way will be to clean them thoroughly with an old tooth-brush, scrubbing the scratches along their length so as to remove all accumulated dirt. It would be better to do this with plenty of water, and in that case it would be advisable to first of all thoroughly wet the gelatine side so as to avoid marking it. After thoroughly cleansing the scratches, the negative must be dried in a current of air, and the scratches should then be painted over two or three times with a solution of Canada balsam in turpentine or Xylol, painting this solution along the length of the scratches, and allowing each application to dry before applying another. The glass side of the plate should then receive a further coating of the varnish (all over the surface), and we think that you will then overcome any possibility of the marks printing. Should they do so, however, you can overcome it by cementing another sheet of glass to the defective glass by the use of stiff Canada balsam and moderate pressure, binding the edges together with lantern-slide strips.

Waterproofing Wooden Sink. Two or three coatings of thoroughly good white lead paint would form a good basis; but, if you have not yet made the sink, it would be a great advantage if you were to screw it together with thick white lead between all the joints, forcing the screws home so that the surplus lead exudes. If you are not particular as to the appearance of the sink, you would find that asphaltum varnish (or a good quantity of Brunswick black, sold by most ironmongers) would form an exceedingly good coating, which would keep out the wet and chemicals for a long time. It would be better to give two or three coatings of the preparation, leaving plenty of time after each coating for it to become thoroughly dry and hard before adding the next one. Another excellent plan, and one which we can strongly recommend, is to fit a lining of the marble-like oilcloth, commonly known among drapers as "American moleskin," which is glossy oilskin on one side, with soft woolly backing. This should be fitted carefully, and all the folds (at the corners) turned in so that they lie well out of the way. The interior of the sink should be coated rather thickly with asphaltum varnish, and the oilskin laid down in its place, and pressed well into contact with the fresh varnish all over the bottom and sides. The edges should stand above the sink about an inch or so, and these should be snipped down at the corner and turned over to protect the edges of the woodwork. A row of tacks along the edges will complete the work, and give you an excellent sink.

TRADE NOTES

The Burke & James tenth general catalogue which is at hand, will interest every purchaser of photographic apparatus and supplies. A number of new photographic goods are listed, and you had better brush up and get a copy before laying in your new line of supplies. A "Square Deal" is accorded to all who deal with this progressive and aggressive Western concern. The address as you doubtless know, is Burke & James, 118 West Jackson Boulevard, Chicago, Ill.

Photograms of the Year 1906. Tennant & Ward, 287 Fourth avenue, New York City, American Agents. Price $1.50 in cloth. $1.00 in paper. This supplement to the photographic exhibitions reproduces twenty-four of the pictures exhibited at The Royal Photographic Society's show, and twenty-five from the Salon of the Linked Ring. Even more interesting than these, however, are the hundred and two other pictures, by non-exhibitors, at home, in the Colonies, or abroad. The American schools, which are unusually weak this year at both Royal and Salon, are unusually strong in *Photograms* where no less than twenty-eight American pictures are reproduced.

The format of *Photograms of the Year* is materially changed with the current volume. The number of pages is slightly increased, the pictures (151 in number) are printed on "art" paper, separate from text, and the critiques are on antique paper.

The criticisms on the exhibitions and on the bulk of the examples reproduced, are by A. C. R. Carter, while foreign and Colonial "schools" have separate essays from local writers, as,—"Pictorial Photography in America" by Roland Rood, "Pictorial Photography in Canada" by H. Mortimer Lamb, "Notes from Australia" by A. Hill Griffiths, "The Year's Photography in Spain" by M. Mendez Leon, "Western Workers in the United States," by Fayette J. Clute, "Artistic Progress in France, by Robert Demachy.

The Crocker Flashlight Canopy is a new appliance in which to make a flashlight, adapted to prevent the diffusion of the gases developed from the substance employed to produce the flashlight and retain them in the receptacle, also adapted to diffuse the light preventing the intense contrasts of light and shadow, also to cause the light to be reflected from one side for intensifying the illumination in the direction of the view taken.

If interested in flashlight work write.

The Crocker Co., 2198 West Harrison St. Chicago, Ill.

A Photographic Trip in The Tropics. The Milton Waide Metropolitan School of Photography, Inc., No. 32 Union Square, New York City, are expecting to have a class leave New York the latter part of January, 1907, for the delightful Tropic Island of Porto Rico; return due in New York the first week in March. The class is positively limited to twelve in number, and the outing will not only be a delightful trip, giving over three weeks in the most beautiful Isle of the West Indies, covering every important place of interest, including trip by coach over the Old Spanish Military Road of 88 miles, also the New Military Road from Ponce to Arecibo of 38 miles, but will also be a very *complete* and *exhaustive* course of *personal* instruction in *ideal* and individualized outdoor photography. The "School" will give the entire trip under the auspices of one of its directors and instructors, one who has spent several weeks at a previous trip, in Porto Rico, and thoroughly knows the ground. The price is $350 per person, and includes all traveling expenses to and from and while in Porto Rico, also personal instruction, of the highest order, in out-of-door Photography and one week's instruction at the "School" after return to New York, in ideal plate and film development, and the successful manipulation of "Velox" and "Platinotype" papers. For further particulars, address or call at the "School." If interested, it is necessary to act quickly, as the number is positively limited to twelve (eleven persons, and the "School's instructor.)

The Institution is at present presenting a series of lectures and demonstrations, by prominent men, on such subjects as Photographic Optics, in connection with the lens.

and the use of Aristo Platino, Collodio Carbon, Carbon Sepia and other products which are usually given in the evenings, and are proving highly gratifying to the students now in attendance.

A Suggestion from an Old Timer. Most of us like to make flashlight pictures, and enjoy making exposures under unusual conditions.

It often happens, however, that an opportunity for a night picture occurs when our regular flash lamp is unavailable or inconvenient so we regretfully miss the chance.

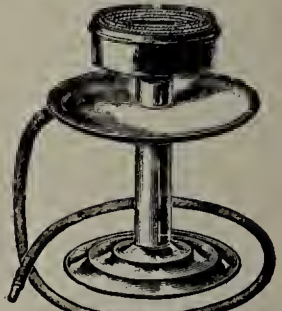
Here is a suggestion from a prominent worker.

He says, "you will always find stowed away in the bottom of my camera case a package or so of Eastman's flash sheets, they take up practically no room, and a number of times have afforded me the opportunity of making a striking picture which I could not have made without them as my regular lamp was miles away."

As a matter of fact, however, the flash sheets are very much more than a make shift and for many subjects far superior to the light from any flash lamp or cartridge owing to the soft and even illumination afforded by their slow burning, as each sheet requires about one second to consume. Aside from the even illumination the longer exposure does not blind or startle the sitter, affording a natural expression so often lacking when the quick flash is used.

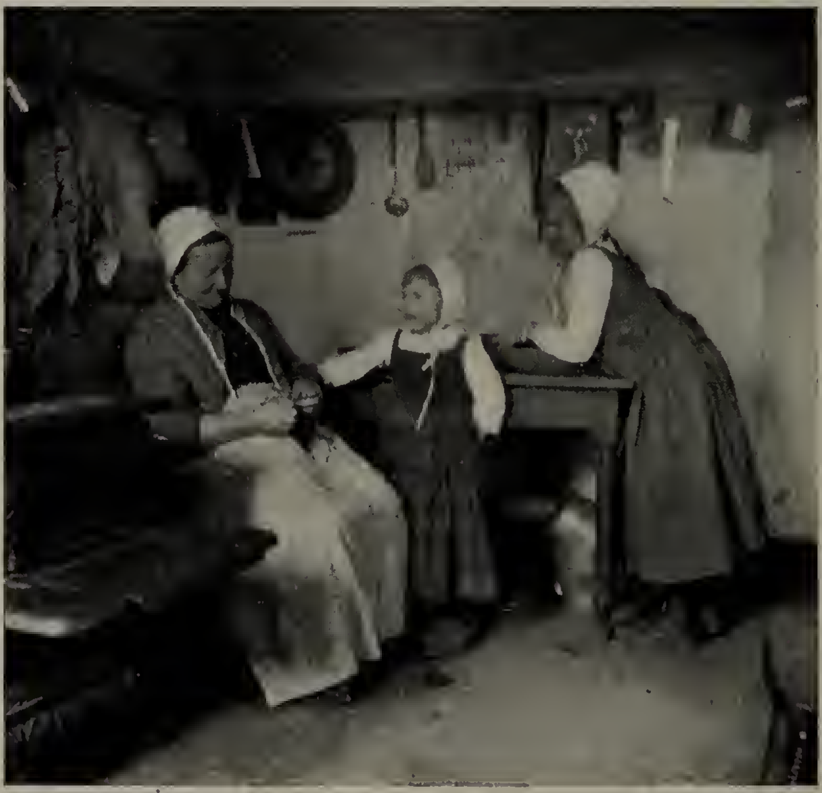
A Safe and Effective Flash Lamp. The Crown Flash Lamp is a good lamp, in fact, we consider it the best flash lamp of this size made.

It is arranged so that the magnesium powder is stored in the body of the lamp and blown up through the center of the flame. The powder is thus thoroughly consumed and a large and powerful light is produced.



In order to fill the magazine with magnesium a removable top is provided. Long or short flashes may be made with it. Only pure magnesium may be used.

The Crown is safe, economical and reliable. It is the most powerful lamp of it's size on the market. It is well made and finished in polished nickel. The price is only $1.50 and compared with any other lamp like it every one will agree that it is worth more. It is made by Folmer & Schwing Co., Rochester, N. Y., and sold by most every dealer.



CAUGHT NAPPING *By Nancy Ford Cones*
(Kodak Exhibition)

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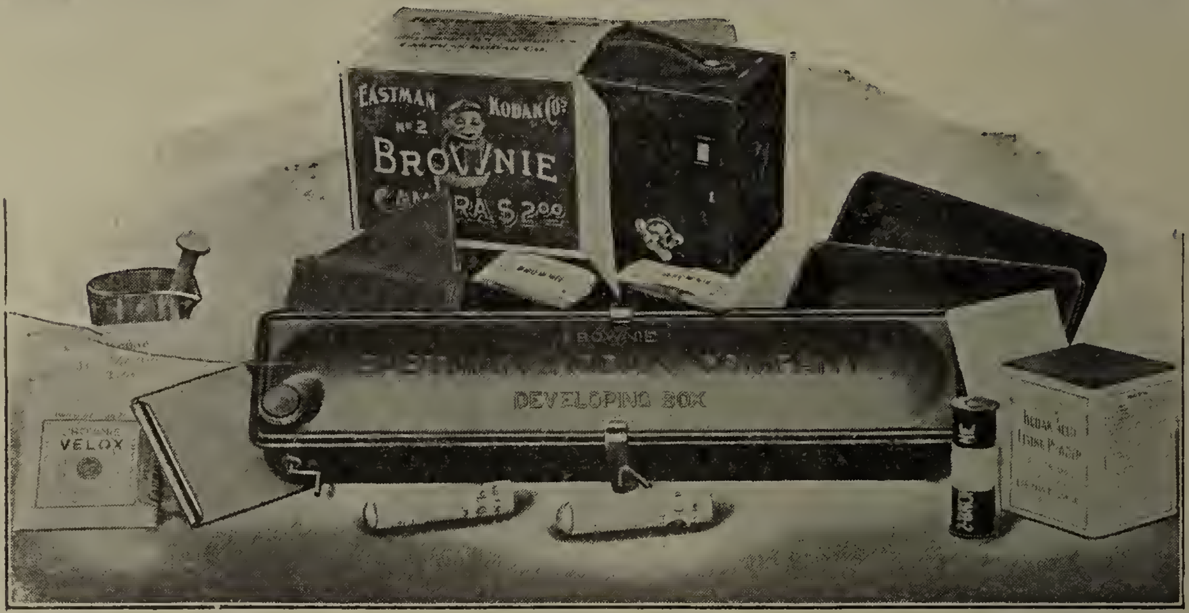

THE KODAK BOX.

Here is just the thing to present to the youngster you wish to interest in photography.

The Kodak Box contains everything for picture making the all-daylight way, including camera, film, daylight developing box, paper, chemicals, dry mounting tissue and mounts for the finished prints.

The camera is the No. 2 Brownie, known the world over as a good, dependable little instrument, and capable of first-class work. Daylight tank development has proven one of the triumphs in the Kodak way of picture making and is provided for in this outfit by the Brownie Developing Box.

The Brownie Developing Box is a simplification of the Kodak Tank Developer, made possible by the short length of the Brownie film, and consists of a handsome metal box of sufficient length to permit the unrolling of the film within it so the developer may act upon it.

The entire operation of development and fixing is conducted in full daylight in a manner similar to that employed with the Kodak Tank Developer, and the results are fully equal in quality. A special instruction book is furnished explaining in detail every operation and so simply written that success is sure, even in the hands of the absolutely inexperienced. The Kodak Box No. 2 contains:

1 No. 2 Brownie camera,	$2.00
1 Brownie Developing Box,	1.00
1 Roll No. 2 Brownie film, 6 Ex.,	.20
2 Brownie Developing powders,	.05
1 Pkg. Kodak Acid Fixing Powder,	.15
1 Four-oz. Graduate,	.10
1 Stirring Rod,	.05
1 No. 2 Brownie Printing Frame,	.15
1 Doz. 2¼ x 3¼ Brownie Velox,	.15
2 Eastman M. Q. Developing Tubes,	.10
3 Paper Developing Trays,	.30
1 Doz. 2¼ x 3¼ Duplex Mounts,	.05
1 Doz. Kodak Dry Mounting Tissue,	.05
1 Instruction Book,	.10
	$4 45

The price, $4.00, is no more than for an ordinary toy of but passing interest. The Kodak Box will afford lasting pleasure to the recipient of any age, and, incidentally, is a happy solution of the ever perplexing holiday gift problem.

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EASY PHOTOGRAPHY.

F. Dundas Todd, editor of the "*Photo Beacon*", in a series of articles in his publication under the above caption, has been endeavoring, among other things, to disabuse the mind of the amateur photographer of certain fallacies regarding exposure and development. Having long ago settled to his own satisfaction the soundness of the theory of the time and temperature method of development, he makes use of the following actual, practical demonstration as a clincher:

"A year ago a boy of fifteen for whom I am responsible used a Brownie Kodak No. 2 during his summer vacation. He made in all about one hundred exposures before one of them was developed. Before I got hold of him he had run about two dozen through the bath with very unsatisfactory results. I pinned him down to the *time and temperature method* and *from that time on he developed all right.*

From September of last year until July of this he never touched a camera. One day he was asked to photograph a group of ladies and he proceeded to borrow my No. 4 Cartridge Kodak, loading it with a roll of six exposures. He had arranged the group on the large front porch and when I came home I was informed of what had occurred. The intention was that I could develop the roll of film, but that evening I was unable to get at the work and so left it to a more convenient season. On returning from the office the following evening I found the boy had developed the roll himself.

So far there appears to be nothing unusual in what was done, but a statement of the facts is rather interesting. To avoid much measuring and weighing, the boy had been in the habit of using a rodinal developer of a certain strength for a particular time at a fixed temperature. It so happened, however, that he was short of this developer and on rummaging through my dark-room landed upon a lot of Eastman's developing powders. He immediately dissolved one of them according to instructions, brought the solution to a temperature of 65 degrees and went ahead. About two years before I had told him that the particular pyro formula I was in the habit of using took six minutes to develop and he thought that time ought to be good enough and he acted on the strength of this opinion. The negatives proved to be very good. Being somewhat curious, I asked him what stop he used and he informed me that he really did not know as he had forgotten all about the stop. An examination of the instrument showed the aperture to be F. 16. Then I inquired as to the time. He smiled very blandly and informed me that he took care to give sufficient variety by starting at one second and giving 2, 4, 6, 8 and 10 to the other five. What surprised me was the *remarkable uniformity of the results.* The negative ultimately selected to print from was chosen not for its technical excellence but because it was the one in which the members of the group appeared to look at their best.

The important feature of this experiment I want to impress upon my readers is the fact that *sufficient* exposure was given and that care was given to the *strength* of the developing bath, to its *temperature* and to the *time* the films were permitted to remain in it. These are the three important factors in developing and the boy had had them hammered into his head so frequently that he was very careful over this part of the work even if he had been a trifle careless about the factors that concerned exposure.

A great many people ask me why

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it is that increased exposure within the limits of the latitude of the plate does not flatten out the gradations in the picture. The mechanics are now understood since it has been possible to make exact measurements in a scientific way, and *the result of prolonged over-exposure would appear to be only an even deposit of fog on the surface of the sensitive film, which merely buries the first impressed image, and whose effect practically is simply to prolong the time of printing.* If an over-exposed and fully developed negative be reduced the reducing bath will *first* of all attack this *surface* deposit and once it is got rid of we find practically that we have got a negative that is equal to one that was correctly exposed and properly developed."

Back up the sound theory of the time and temperature method of development with the remarkable uniformity and unequalled latitude of the Eastman N. C. film, and add to this all the convenience of the Kodak Tank Developer, and you have the ideal method of producing the highest percentage of good results. The experience is in the Tank.

ENLARGEMENTS.

Any owner of a Folding Pocket Kodak, or in fact, almost any model Kodak, has practically a complete outfit for making bromide enlargements of any size. We have just issued a new book "Bromide Enlarging with a Kodak", which explains fully how the Kodak may, by the simplest means, be converted into a practical enlarging apparatus.

In addition, the book contains explicit directions for every process of enlarging down to mounting the finished print.

The book is yours for the asking, at your dealer s or by mail.

NO CHANCE.

Have you ever stopped to consider how pitifully small the happy-go-lucky man's chances for error are with a pocket Kodak? From start to finish every time he wants to make a mistake, he is brought up with a round turn.

Take off the back of the Kodak to insert the film spool, can't put the back on again upside down or wrong end to—there is the word "Top" stamped on the back, staring him in the face.

Try to put the spool in upside down, "Top" on the spool end again points the way.

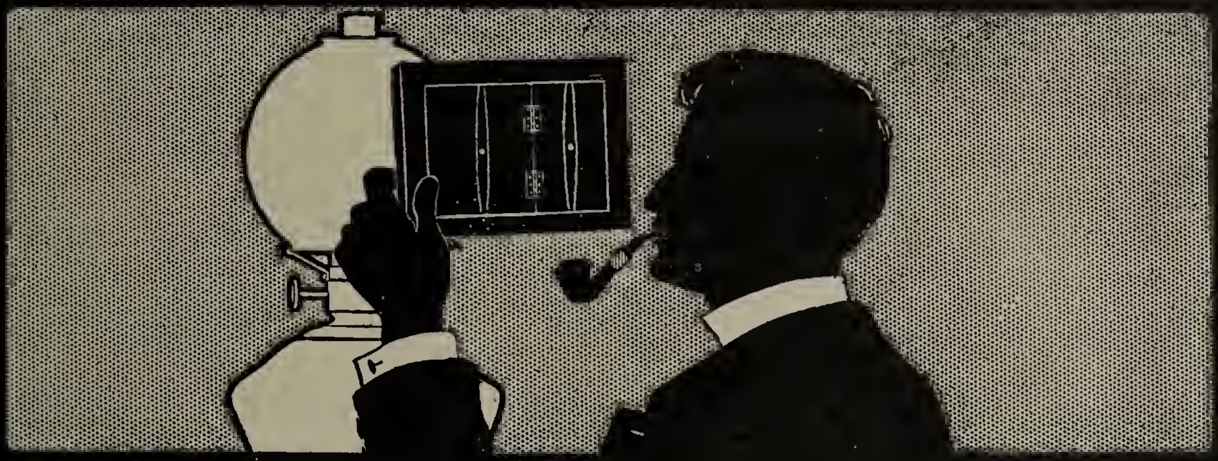
Let him start to wind off the film with the firm determination to run past No. 1—hold on, go slow, a warning hand appears at the little red window and in spite of himself, he turns slowly until No. 1 appears.

Then there is the finder right where he has *got* to look into it—absolutely no excuse for cutting off the head or feet of his subject.

Correct focus? Ah, there is where he has his opportunity—just draw out the front and take chances: But, no, here is a nice little graduated scale with various distances marked on it—looks too business-like to pass by and unconsciously he estimates the distance and adjusts the bellows accordingly.

Next day he is out for street scenes and general views—at last here *is* a chance to mix things up, but way down on the right hand side of the Kodak front is a little device with a catch for stopping the front in correct focus for various distances — yes, twenty-five feet is about right, so he sets the Automatic Focusing Lock and the "Fixed focus fixer" as an enthusiast so aptly termed it, thwarts his final endeavor to go wrong.

The film with the speed of a Seed 27—Eastman N. C.



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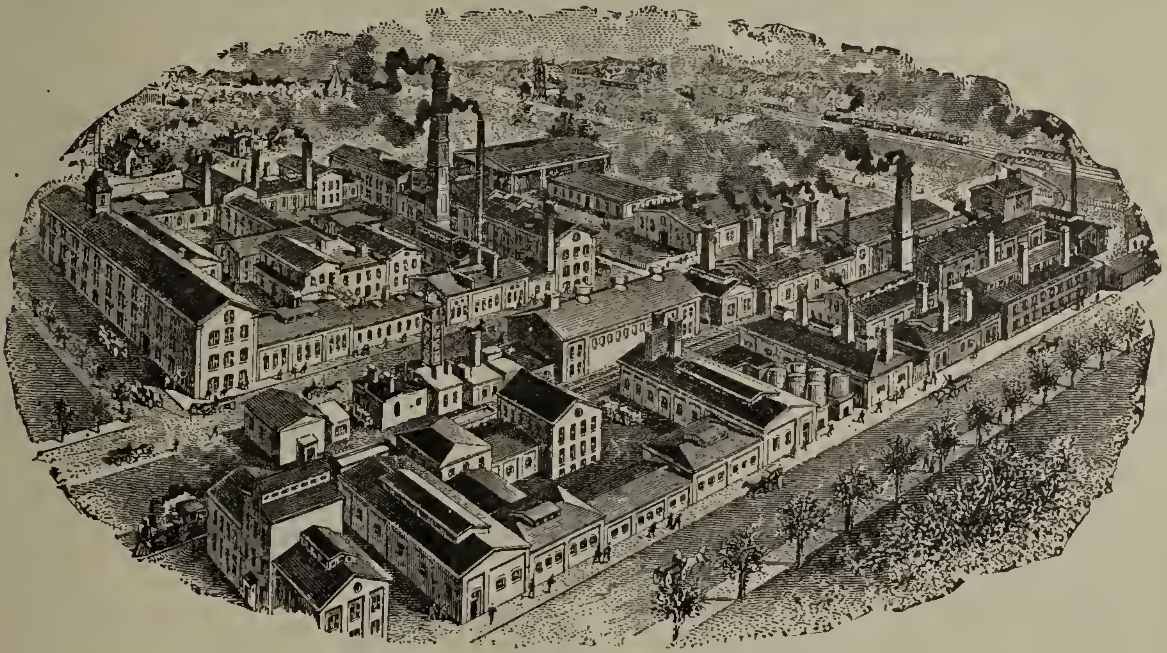

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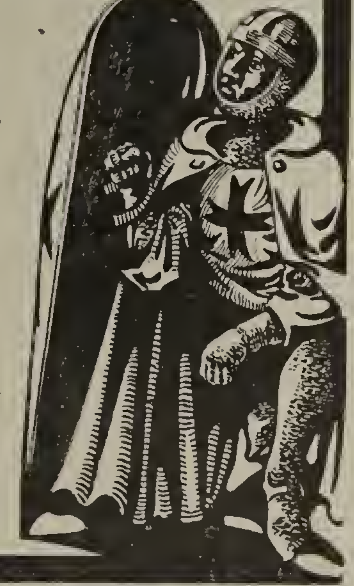

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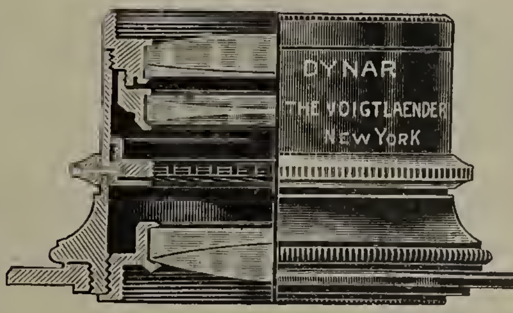

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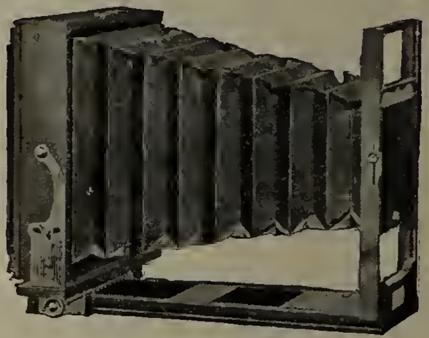

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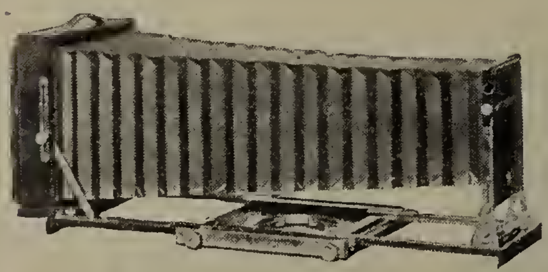

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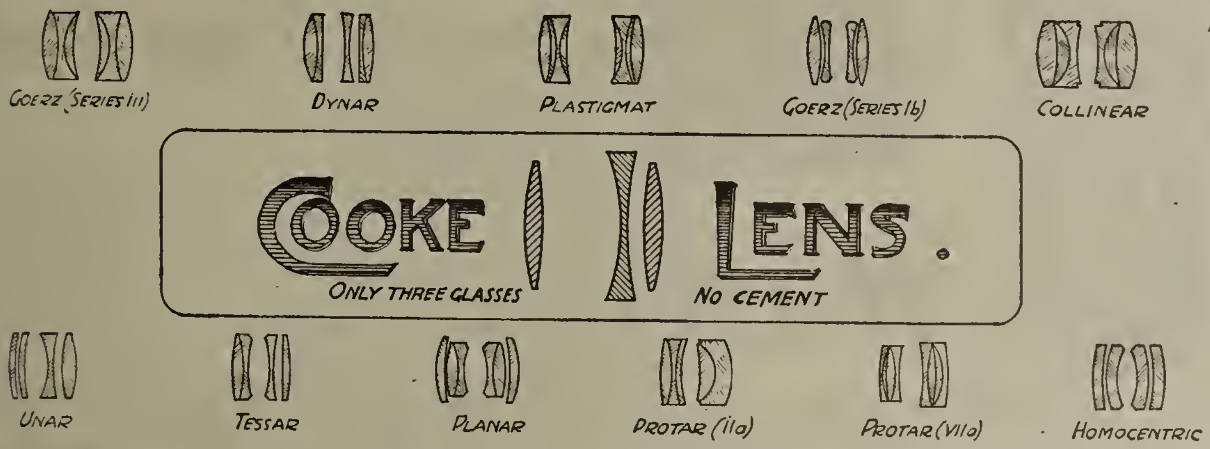

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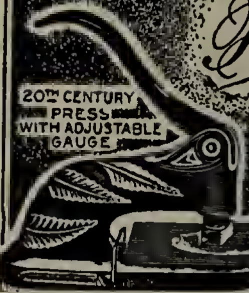

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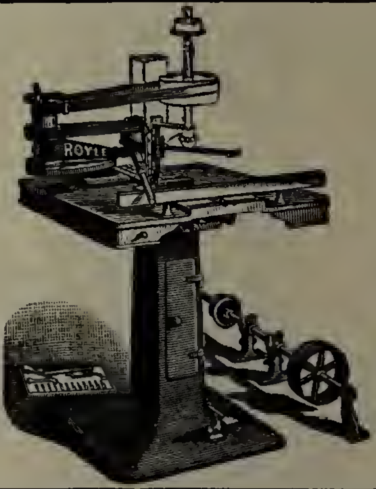

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